INDUSTRIAL MEDICINE

Industrial Health, Occupational Diseases and Traumatic Surgery

May, 1943

WAR CONFERENCE

•

American Assocation
of
Industrial Physicians and Surgeons
(Twenty-Eighth Annual Meeting)

•

American Industrial Hygiene Association
(Fourth Annual Meeting)

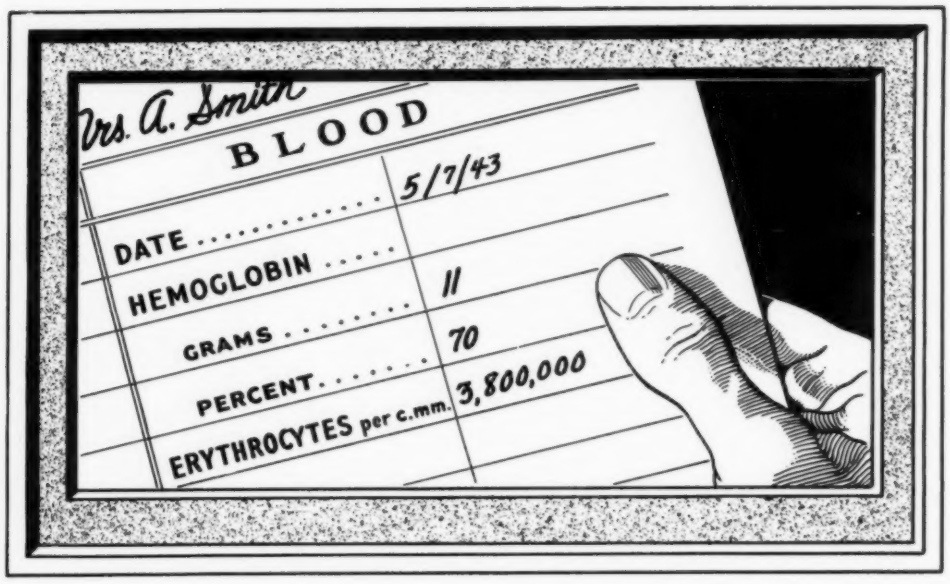
•

National Conference
of
Governmental Industrial Hygienists
(Sixth Annual Meeting)

•

Rochester, N. Y. May 24-27, 1943.

Volume 12 Number 5



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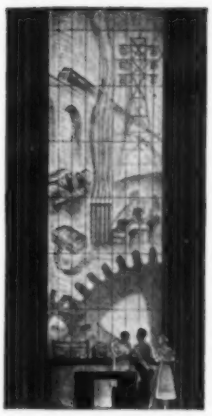

INDUSTRIAL HYGIENE
INDUSTRIAL MEDICINE
& RAILROAD SURGERY

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AMONG interesting highlights of the General Motors Medical Conference: VICE-PRESIDENT ANDERSON: "There were only 130 cases of lost time due to occupational diseases, from all causes, in General Motors last year. . . . You are looking after the health of 390,000 war workers" (page 265). . . . DR. FRAME: "They (women) are usually less nervous when they know they will be examined by a woman physician" (page 267).... MR. HOGATE: "We aren't talking to a mass meeting. We're talking to a parade" (page 270).... DR. LAMB: "With complete and accurate records and the pass system, insincere patients usually do not make many purposeless trips to the hospital" (page 271).... DR. KOWALS: "The industrial clinical laboratory makes a definite contribution to the maintenance of health of the community" (page 275).... DR. ELSTEN: "A spot survey of a plant with no follow-up gives very little useful information as to the actual conditions existing in that plant. Conditions change hourly" (page 278).... DR. SAWYER: "A nutrition program should be rated high on the industrial relations list of worthwhile products" (page 280).... OTHER highlights: DR. WITTMER: "Preventive medicine is not a technique that will eliminate all illness, but rather a rational approach to medical problems that are common to groups of people" (page 283), and "You may be a good diagnostician and an excellent therapeutist, but unless you have a proper conception of the basis for your examinations, diagnoses, etc., they will be worthless when evaluated for effectiveness" (page 285).... LEVER HOUSE Health Center: "open 24 hours a day, approximately 400 people avail themselves daily of the opportunity of advice and treatment, the majority with nothing more than a scratch, a sliver under the flesh, or maybe a sore throat" (page 287) .... DRS. SNYDER,

INDUSTRIAL MEDICINE, The Journal of Industrial Health, Occupational Diseases and Traumatic Surgery. Entered as second class mail matter August 28, 1941, at the Post Office at Chicago, Illinois, under the Act of March 3, 1879. Published on the fifth of each month by INDUSTRIAL MEDICINE PUBLISHING COMPANY, Chicago. STEPHEN G. HALOS, President; A. D. CLOUD, Publisher; C. O. SAPPINGTON, M.D., DR. P.H., Editor; CHARLES DRUECK, JR., Secretary and Treasurer; STEPHEN G. HALOS, Advertising and Business Manager. PUBLICATION, EDITORIAL and EXECUTIVE Offices: 605 No. Michigan Ave., Chicago, Illinois. Subscription $5.00 per year in the United States; $5.50 per year in Canada; $6.00 per year in other countries. Single copies 50 cents.

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Eastern Representative, H. GORDON HUNTER, 2625 Arlington Ave., Spuyten Duyvil, (Kings Bridge 3-2114), New York City.

SQUIRES and FORSTER (page 291) bring to its six-year conclusion the study of arthritis published, at its five-year point, in INDUSTRIAL MEDICINE, August, 1941. . . . QUINDARA DODGE discusses nutrition from the standpoint of one skilled in its practice as well as its theory (page 297). . . . DR. COLLINGS reports on burn treatments at Bethlehem Steel Company Hospital (page 301). . . . DR. DICK, and his co-workers, describe their new and original program for the "placement of handicapped or physically limited workers on the job they can best do" (page 303). This is an outstanding development, and its progress will be followed with great interest. . . . THE EDITORIAL "Consultation Service" (page 308) suggests a few of the possibilities inherent in the kind of program planned by DR. SAWYER'S committee for the Rochester WAR CONFERENCE, May 24-27. Come—*with questions.* . . . THEN follows the program, in detail as to the formal presentations (page 312). . . . INDUSTRIAL Hygiene Foundation's report (page 318) on the questions involved in the matter of blood donations by war workers is a very important contribution to the peace of mind of all concerned. It should have the widest possible circulation, and we are privileged to see that it gets that in the industrial medical field. . . . MR. COOK'S review of DR. SAPPINGTON'S new book "Essentials of Industrial Health" (page 334) is written from the standpoint of industrial hygiene. This follows DR. SELBY'S comment (INDUSTRIAL MEDICINE, April, 1943) from the medical point of view; and it is second in a series intended to include also the viewpoints of safety and labor. It isn't every book that will justify four analyses which are all different and yet all definitely related to the *whole* of its content. Such, however, is the subject of industrial health, and such is the authoritativeness of this author's presentation of it in a real textbook. . . . DR. SLOBE'S "Outline of First Aid for Nurses in Industry" (page 350) has been the subject of several of his lectures at nurse institutes, where it was enthusiastically received. Here, and in our *Industrial Nursing* reprint which will follow this issue, to be available to nurses everywhere, it will have the wide circulation it deserves. . . . LAST MINUTE news item: DR. DUDLEY A. IRWIN, of the Banting Institute, University of Toronto, has been appointed Medical Director of the Aluminum Company of America. DR. IRWIN has been a member of the medical faculty of the University since 1931 and is noted for his research at Banting, particularly on industrial health problems. . . . ONE ISSUE finished means another one coming up. INDUSTRIAL MEDICINE for June will have "Tripoli and Silicosis," by DRS. CAREY P. MCCORD, STUART F. MEEK, and GORDON C. HARROLD —an outstanding piece of work, tending, at least, to clear up a time-honored controversy; and a complete report by MAJOR CHARLES R. REIN, (MC) and MARGARET G. STEPHENS of Metropolitan's Medical Division, on the "Routine Serologic Testing of 15,000 Employees of the Home Office of the Metropolitan Life Insurance Company"— these together with other timely and excellent articles, editorials and News, Comment and Opinion, as usual. . . . MEANWHILE, check in at Rochester, *with questions.*

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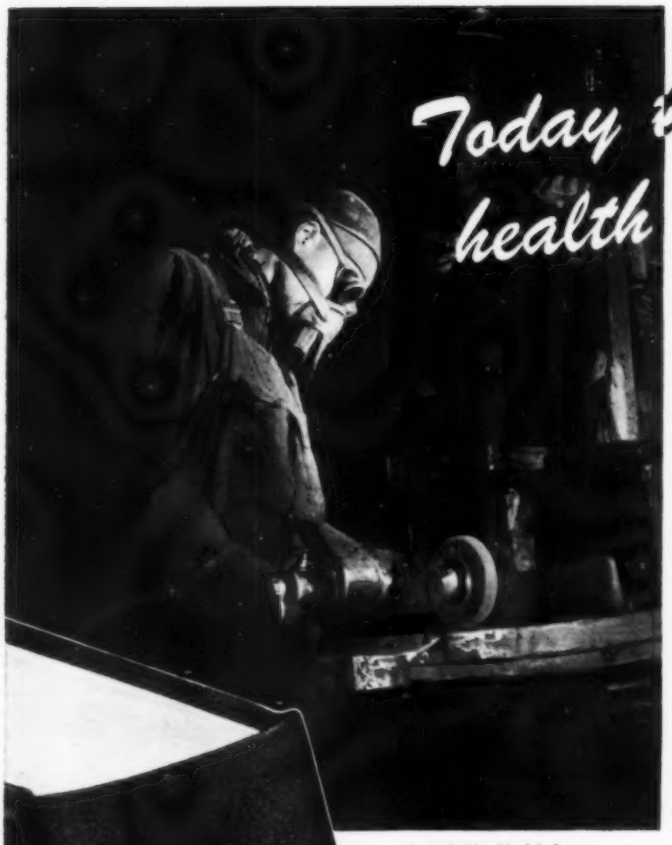

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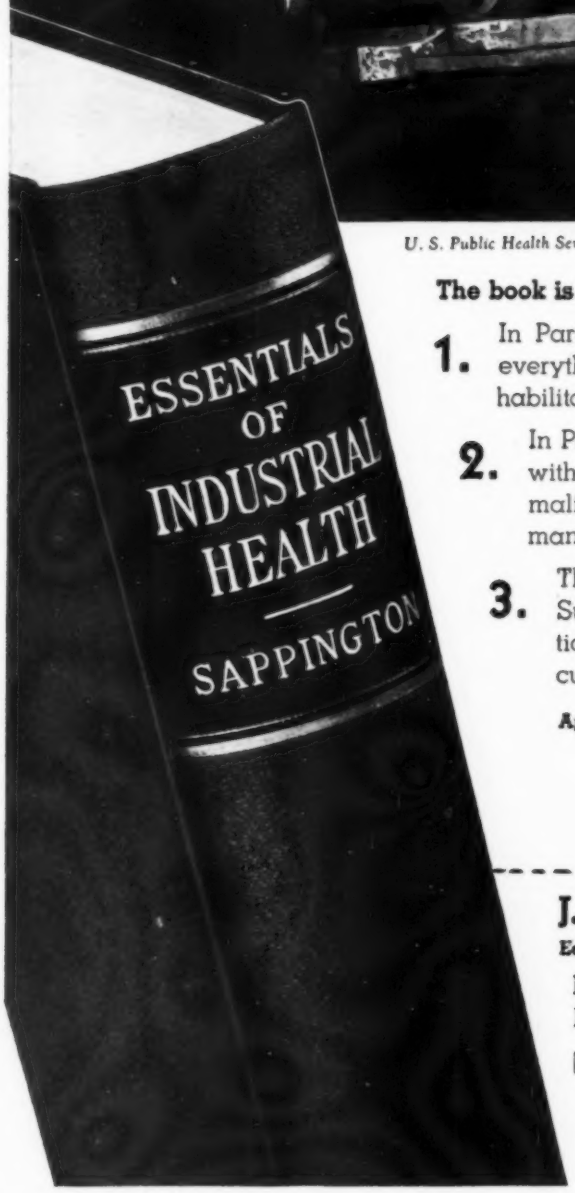

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has guided the destiny of the organization throughout its existence, from its incipience through the wide expansion of its present status, embracing the medical service of all affiliated and most associated companies.

DR. ALVIN W. SCHOENLEBER, Medical Director of Standard Oil Company of New Jersey, announces his retirement. The company's *Medical Bulletin* for April carries the announcement "with regret," and continues: "Our sorrow is shared by all members of the medical department throughout the world, most of whom know him personally and all of whom hold him in high regard. In spite of his valiant efforts to carry on his work while laboring under the burden of his illness, he found it necessary to ask for sickness leave and now retirement. The Doctor was born at West Bend, Wisconsin, June 25, 1886. His grandfather was a pioneer settler of that region and had to defend his new home against hostile Indians. DR. SCHOENLEBER received his Medical degree from the University of Illinois Medical College, Chicago, and served his internship in Cook County Hospital, Chicago. Upon completion of his internship he took a course at the U. S. Army Medical School in Washington, D. C., and was commissioned a First Lieutenant in the Army Medical Corps in 1913. He saw service in Panama and was stationed in the Philippines at the outbreak of World War I, being returned to the U. S. in the early days of the War. Commissioned as Captain in 1916, he rose in rank to Major in 1917 and to Lieutenant Colonel in 1918. During the World War he served as Sanitary Inspector of the 77th Division, Camp Surgeon in Charge of all Medical Service at Camp Upton, Division Surgeon at Camp McClellan, and Camp Surgeon

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at Camp Sherman, Ohio. He resigned from the service in May, 1919, but retained a commission in the Medical Reserve as Colonel. DR. SCHOENLEBER entered our company's service in May, 1919, immediately after his resignation from the Army, and served as first Medical Director of the Carter Oil Company at Tulsa, Oklahoma, until called to New York as assistant to DR. DENNO in 1921. Since then a large part of his time has been spent in the field perfecting the organization and developing the medical services in our associated and affiliated companies in many South American countries, Europe and the East Indies. Coming to the company with a thorough knowledge and experience in medical organization, sanitation and tropical medicine, the added experience gained in his work with the company has made him a recognized and outstanding authority in these fields. He made many inspection trips to company operations throughout the world and his energy and comprehensive grasp of field problems were an inspiration to all who worked under his direction. The measures instituted and carried out under his guidance have been of untold value to the company and the employees in the saving of lives and of time lost from illness. He was a protagonist of better medical care for our employees and it was largely through his efforts that the Employees Mutual Hospital and Medical Associations were inaugurated. He is the author of numerous articles on tropical medicine and hygiene. His most recent report, 'The Food Handler as a Transmitter of Amebiasis,' demonstrated the importance of food handlers in the transmission of amebiasis. DR. SCHOENLEBER'S retirement was effected on March 24, 1943. He takes with him the admiration, respect and affection of those who had the good fortune to work with him."

DR. EDWARD C. HOLMBLAD, Managing Director of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, was one of the speakers at the Industrial Health Conference at Indiana University School of Medicine in February; he was also on the programs of the Industrial Health Conferences at Aurora, Illinois, March 25, and at LaSalle, Illinois, April 8. On Thursday, April 15, he addressed the joint meeting of the Jackson Park and South Side branches of the Chicago

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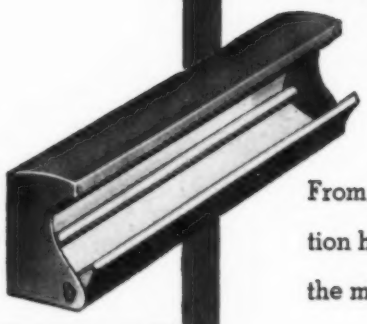

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Medical Society. On April 21, he spoke at a luncheon meeting of the Kansas City Chamber of Commerce and, on the evening of the same day, he discussed "Present-day Problems in Industrial Medicine and Surgery" at the annual meeting of the ASSOCIATION OF RAILWAY AND INDUSTRIAL PHYSICIANS AND SURGEONS OF KANSAS CITY.

DR. ROBERT C. PAGE, assistant medical director, and editor of *The Medical Bulletin* of Standard Oil of New Jersey, was commissioned Captain in the Army Medical Corps and assigned to duty in the Air Surgeon's Office, Washington, D. C., on October 5, 1942. He has just been elevated to the rank of Major. MAJOR PAGE was employed in the medical department at 30 Rockefeller

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- No danger of alkalosis
- Prompt pain relief
- Mildly astringent
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Brand of Aluminum Hydroxide Gel

MODERN NON-ALKALINE THERAPY FOR PEPTIC ULCER AND GASTRIC HYPERACIDITY

ALBA PHARMACEUTICAL DIVISION
WINTHROP CHEMICAL COMPANY, INC. SUCCESSOR
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REDUCE POST-ACCIDENT "SLOW-UPS" WITH NEW-SKIN

Accidents will occur . . . but when minor cuts, abrasions, burns are treated with NEW-SKIN, post-accident "slow-ups" . . . due to impaired flexation and dexterity . . . are reduced to a minimum.

NEW-SKIN, when applied topically, diffuses evenly, smoothly . . . forms a tenacious, protective covering . . . is highly flexible, water-proof and relatively non-irritating . . . withstands repeated washings with soap and water.

The superiority and utility of this aseptic covering, as a protection against contamination, recommends its use in industrial first aid.

FORMULA: Pyroxylin Solution, Oil of Cloves, 8-hydroxyquinoline (1%), Alcohol 8.7%.

ALSO RECOMMENDED in the treatment of poison ivy, dermatitis . . . as a protection against cast irritation . . . friction, blisters . . . post-operative area infection.

NEWSKIN COMPANY, 882 THIRD AVENUE, BROOKLYN, N. Y.

Plaza, New York, February 1, 1939. He was recently elected to fellowship in the American College of Physicians.

DR. HAROLD A. VONACHEN, medical director, Caterpillar Tractor Company, is chairman of the Greater Peoria Industrial Health for Victory Club.

G. A. PETERS, D.D.S., of the Division of Dental Health Education, has been assigned to the Division of Industrial Hygiene of the Illinois State Department of Health. This addition provides a consulting dental service for industry. DR. PETERS is available to all Illinois plants for consultation in setting up a dental program or in increasing present dental programs or facilities.

VERNE A. ZIMMER, director of the Labor Department's Division of Labor Standards, is given honorable mention in DR. ALICE HAMILTON'S newly-published autobiography, "Exploring the Dangerous Trades." In a text footnote, DR. HAMILTON says: "Since the autumn of 1935 I have been attached to Secretary Perkin's Department as Medical Consultant, and I have no hesitation in saying that this Department, especially the Division of Labor Standards under V. A. ZIMMER, should be given a large share of credit for the improvement now seen in the dangerous trades. The public does not realize how greatly the Labor Department has expanded and developed under Secretary Perkins, but I, who have known it since its foundation in 1912, have seen it pass through a promising childhood and a troublesome adolescence, to its present capable adult self. The careful, steady spadework carried on in the different states, all of them sovereign states with their own standards or lack of standards, is the least spectacular but I think the most rewarding part of the campaign against industrial accidents and diseases."

First Aid Film

DR. R. R. SAYERS, Director of the Bureau of Mines, announces a new sound film presenting basic first-aid information in graphic form. This is entitled "Help Wanted," is in 16-millimeter sound, runs 31 minutes. Effective use is made of animated diagrams superimposed on actual photographs to show blood circulation, pressure points for staunching the flow of blood from a wound, and the effect of proper treatment of bleeding. Typical mishaps causing bleeding wounds, shock, burns, asphyxiation, fractures, and other injuries and methods of treating them are portrayed. Opening scenes show the patient entering an operating room, and the doctor being questioned by a news reporter. The doctor emphasizes the value of a working knowledge of first aid and proceeds to give instructions in fundamental applications. There follow scenes of typical incidents which may cause bleeding wounds; a chart of the circulatory system of the human body; types of bleeding; digital pressure points for bleeding of scalp, face, neck, shoulder, and leg; types and uses of tourniquets; cause and treatment of shock; proper position of the body; administering stimulants; arterial and venous bleeding and their control, and uses of compresses and triangular and roller bandages. Next are shown treatment of burns; some accidents which may cause unconsciousness; procedures in artificial respiration; simple and compound fractures and their treatment; the use of splints, and methods of transporting the injured. Application for loan of "Help Wanted" should be addressed to Graphic Services Section, Bureau of Mines, 4800 Forbes Street, Pittsburgh, and should state specifically that the borrower has a sound projector. No charge is made for the use of the film; the exhibitor is expected to pay transportation both ways and for loss or damage other than normal wear.

The Changing Order

NEW YORK Academy of Medicine has organized a committee to study medicine and the changing order. The objectives are thus defined: To be informed on the nature, quality and direction of the economic and social changes that are taking place now and that are clearly forecast for the immediate future; to define in particular how these changes are likely to affect medicine in its various aspects; to determine how the

"The high and practical patriotism of you men and women of The Anacin Manufacturing Company is inspiring. Your record will be difficult to surpass, yet the Army and Navy have every confidence that it was made only to be broken."

ROBERT P. PATTERSON
Under Secretary of War

Official U. S. Signal Corps Photo shows Army doctors preparing for surgery somewhere in Australia.

WE MARCH WITH THE MEDICAL CORPS

The high skill and devotion to duty of our Army and Navy medical men, using new techniques and new products, combine to create an inspiring record of life-saving in this war.

We of The Anacin Manufacturing Company, the men and women in the plants, laboratories, and offices, are proud to have been able to share in the drug industry's contribution to this achievement.

We are now privileged to fly the blue and crimson pennant of the Army-Navy "E."

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IT IS THE EMPLOYEES of the company who have earned this award.

By working round-the-clock, every day, they have greatly stepped up production, so that all government orders have been delivered on or ahead of schedule. At the same time they have maintained a steady supply to the regular civilian channels.

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Bacteriostat
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SULFALLANTOIN (Schuylkill) is indicated in the treatment of various types of infectious ulcerations and wounds; 2nd and 3rd degree burns; osteomyelitis; bursitis; compound fractures; local eye, ear, nose and throat infections, etc.

POWDER for dusting or making solutions or wet dressings. ¼ oz., 1 oz. and 16 oz. in glass.

OINTMENT (2%) in a special soothing absorption base. 1 oz., 2 oz., 14 oz. and 5 lb. jars.

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Literature and professional samples available upon request from Schuylkill Chemical Co., 2346-M Sedgley Avenue, Philadelphia, Pa.

SULFALLANTOIN

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best elements in the science of medicine and its services to the public may be preserved and embodied in whatever changed social order may ultimately develop. Members of the committee include DRS. MALCOLM GOODRIDGE, Chairman, ARTHUR F. CHASE, JAMES A. MILLER, ALAN GREGG, GEORGE BAEHR, HARRY ARANOW, I. OGDEN WOODRUFF, PAUL REZNIKOFF, HENRY W. CAVE, TRACY J. PUTNAM, WILSON G. SMILLIE, JEAN A. CURRAN, HERBERT B. WILCOX, HOWARD CRAIG, E. TOLSTOI, E. H. POOL, ROBERT POUND and IAGO GALDSTON, Secretary. The committee plans to survey the changes that are currently taking place in our economic and social organization and to consider changes likely to develop during the next decade. In this survey the committee will solicit information and opinion from a wide variety of groups, including sociologists, economists, representatives of organized labor, industrialists, bankers and politicians. Every shade of political and economic thought is to be represented. Also, in this connection, the committee will solicit the cooperation of those intimately connected with medicine in the capacities of deans of medical schools, teachers of medicine, hospital authorities, hospital clinicians, public health workers, those interested in graduate education, physicians in industrial medicine, medical social workers and workers in voluntary health organizations. The committee will welcome suggestions from any one who might propose sources of information which would aid it in this study. It will devote itself primarily to the study of how, within the changing social order, the best qualities in medical service, in medical education and in medical research can be preserved and developed. It is expected that the study will continue until such time as sufficient evidence has been accumulated to make possible a considered report.

—From *Science*, April 23.

MEDICAL Association of Georgia, Georgia Department of Public Health and the Associated Industries of Georgia sponsored Industrial Health Institutes at Augusta, March 11; Savannah, March 12; Atlanta, March 15; and Columbus, March 16. Titles of addresses and physicians on the program included: "Community Health Problems Affecting Industry," DR. T. F. ABERCROMBIE, Atlanta; "Health Services Available to Industry in Georgia," DR. L. M. PETRIE, Atlanta; "Recent Developments in the Handling of Industrial Injuries," DR. LLOYD NOLAND, Fairfield, Ala.; motion picture, "Save A Day," by U. S. Public Health Service; "Medical Aspects of Health Program for Industry," DR. CARL PETERSON, Chicago, Council on Industrial Health, A. M. A. DR. W. W. BATTEY delivered the "Address of Welcome" at Augusta; DR. C. F. HOLTON at Savannah; DR. GEORGE W. FULLER in Atlanta; and DR. W. E. MAYHER at Columbus. DR. C. W. ROBERTS presided at Augusta and Savannah; DR. R. E. NEWBERRY in Atlanta.

GENERAL

A SYMPOSIUM on "Health in Industry," with discussions covering hygiene, occupational diseases, first aid and industrial nursing, nutrition and contagious diseases, was held at South Bend, Indiana, April 16. R. B. NICHOLS, vice-president and general manager, Bantam Bearings corporation, presided. Participants were DR. F. R. NICHOLAS CARTER, secretary, South Bend board of health; DR. V. E. HARMON, South Bend, member of the industrial health committee, Indiana State Medical association, and DR. J. W. HILBERT, medical director, Studebaker corporation.

AMONG the speakers and subjects at the seventy-second annual session of the California Medical Association, at the Biltmore Hotel, Los Angeles, May 2-3, under the presidency of Dr. William R. Molony Sr., Los Angeles, were the following:

DR. JOHN H. FITZGIBBON, Portland, Oregon, Wartime Community Health Problems in Oregon.

JOHN R. MANNIX, Detroit, director, Michigan Hospital Service, Voluntary Non-profit Health Plans.

DR. TOM D. SPIES, Cincinnati, and Birmingham, Detailed Methods of Diagnosis and Therapy in Acute Nutritive Failure.

DR. WILLIAM A. SAWYER, Rochester, New York, Some Medical Problems in Wartime Industry.

PHILIP DRINKER, Chem. E., Washington, D. C., Health Control in Welding Work.

DR. JOHN H. HUTTON, Portland, Spinal Anesthetic Agents and Methods Usually Employed at the University of Oregon Medical School Hospitals.

LIEUT. H. L. GARTSHORE, M. C., Army of the United States, Pendleton, Oregon, Psychiatry at an Air Base Station Hospital.

A REPRINT, from *California & Western Med.* October, 1942, presenting a symposium of addresses —in full or in abstract—given at the Institutes on Wartime Industrial Health, held in San Francisco, Crockett, Oakland, San Diego, Ingle-

IMPORTANT ANNOUNCEMENT TO THE MEDICAL PROFESSION:

SEARLE RESEARCH PRESENTS PAVATRINE

. . . THE POTENT, SAFE, NON-NARCOTIC ANTISPASMODIC FOR DYSMENORRHEA, GASTROINTESTINAL SPASTICITIES

OFFERS THESE CLINICAL ADVANTAGES:

1. Dual antispasmodic action—both neurotropic and musculotropic effects;
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Literature showing relaxing action of Pavatrine on spasm, together with dosage and administration, available on request.

Pavatrine is supplied in bottles of 20, 100 and 1000 tablets of 2 grs. each.

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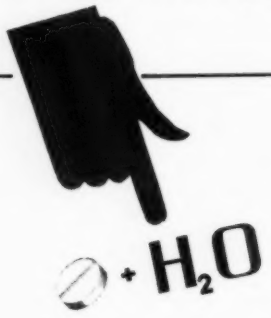
New, faster wet-dressing therapy



When you want results—fast—in contact dermatitis, infections, bruises, abrasions, and other traumatic injuries where wet dressings are indicated, use Domeboro Tabs!

Domeboro Tabs act faster and better than Burow's and boric acid because (a) Domeboro Tabs are *lead-free*. They contain no lead to inhibit the local repair and growth of the skin by interfering with mitosis. (b) Domeboro Tabs provide an inert precipitate which helps keep compresses wet longer. (c) Domeboro Tabs make it easy for patients to carry on home treatment as instructed.

In key industrial and military medical establishments, Domeboro Tabs are preferred for wet dressings. They are recommended by the National Research Council and included in the military *Manual of Dermatology*.

Your job is to get men and women back at the job faster. Up-to-date wet-dressing therapy can help. Always remember to use and recommend Domeboro Tabs!

For trial samples and literature, write

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wood, Glendale and Huntington Park, August 18-28, 1942, has been sent out by the WESTERN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS (RUTHERFORD T. JOHNSTONE, 423 Towne Avenue, Los Angeles, Secretary). The Institutes were sponsored by the California State Board of Public Health, California Medical Association, and the WESTERN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS.

AT THE California Medical Association Council meeting February 28, 1943, PRESIDENT MOLONY, of Los Angeles, suggested that consideration be given to the adoption of legislation providing for a free choice of physicians in industrial accident cases. His reference was particularly directed to the provisions of this character in the New York Workmen's Compensation Laws. The Committee on Public Policy and Legislation, through DWIGHT H. MURRAY, M.D., Chairman, of Napa, sent to C.M.A. Councilors a copy of the provisions of the New York law regarding choice of physicians and allied matters, with a request for study of the provisions, and Councilors' opinions on the matter, to permit the Committee on Public Policy and Legislation to take such steps to carry out the wishes of the Council.

VERNE ZIMMER, Director, Division of Labor Standards, U. S. Bureau of Labor, writes: "With the permission of the Bureau of Hygiene and Sanitation of the New Jersey Department of Labor, this Division has reprinted a small supply of the enclosed 'Standards for the Protection of Workers in Gas and Electric Welding,' drafted by engineers and welding experts of that State's Industrial Safety Committee. These Standards are for the practical guidance of superintendents and foremen. They spotlight health hazards due to fumes, dusts, and glare, as well as accident risks from fire, explosion, and shock. The Division feels this suppplements its more technical Special Bulletin No. 5 and is the most authoritative safe practice code available. Copies of these Standards are obtainable from the Division of Labor Standards, U. S. Department of Labor, Washington, D. C., as long as the supply remains available.

FACTORY inspectors of the British Ministry of Labor have been given the power to require any factory employing 250 or more workers to have a canteen. More than 96% of the British factories employing more than 250, and 7,500 small factories now have canteen service.

WHAT Should Be Done to Improve the Health Program and the Medical Care of the Worker" was the theme of a symposium in Kansas City, March 17, the first in a series on industrial health planned for the greater Kansas City area. Representatives of labor, management, public health, industrial nurses, industrial physicians and the compensation board participated; and DR. CLARENCE D. SELBY, medical consultant for General Motors, Detroit, was the guest speaker.

THE rapidly-rising tempo of war-production plus the influx of new workers into industry have combined to increase, greatly, the accident rate in many war plants. Yet Caterpillar Tractor, operating on the largest and most urgent production schedules in its history, has reduced its lost-time accident rate in 1942 to only about half the 1941 figure . . . The "Caterpillar" safety division supervises a never-ending program to create the proper mental attitude, the working conditions and methods that help prevent industrial casualties and sickness.

—From "How 'Caterpillar' Helps Fight World War II."

CONTESTS are a common enough American phenomenon. In fact we vie to select the healthiest baby, the most curvaceous beauty, the highest golf score. Westinghouse Electric & Manufacturing Co., however, has just reversed routine by conducting an *unpopularity* contest. From results, it seems that the most disliked foods line up as: liver, lamb and cottage cheese. At least, this was the evidence polled from some 2,000 women. The pity of it all, nutritionally speaking, is that these items do not deserve disfavor, so—camouflage, Cooks, is the order of the day! The doubtful privilege of holding fourth and fifth places as dinner table wallflowers goes to: parsnips and turnips.

—*Hospital Topics & Buyer*, April.

BUREAU of Industrial Hygiene Pennsylvania Department of Health, recently conducted a survey in Dauphin County of 84 industrial plants with 18,933 employees, revealing that full time physicians are em-

"Habits are at first cobwebs ... then cables"

Spanish Proverb

...and Petrogalar makes it easy to establish "habit-time" for bowel movement

If you think Petrogalar is just an ordinary mineral oil . . . this message will interest you.

An *aqueous* suspension of mineral oil, Petrogalar is more than a laxative. It adds unabsorbable fluid in the colon. Brings about comfortable elimination with no straining . . . no discomfort. Furthermore, Petrogalar supplies moisture . . . retains moisture . . . counteracts excessive dehydration.

Miscibility and even dissemination are assured by the fine division of suspended oil globules.

Petrogalar may be thinned with water, milk or fruit juices.

Five types offer a choice in treating a wide range of conditions.

Try Petrogalar on your next group of patients.

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Supplied in 5 Types

Petrogalar Laboratories, Inc.
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Petrogalar*
Promotes "Habit-Time" of Bowel Movement

Gremlins
of sphygmomanometry
. . . OFF-LEVEL TILT
The accurate mercury manometer operates on the immutable law of gravity and should be so positioned that the mercury column, at rest, stands exactly at zero. Level placement of the instrument is essential to the taking of accurate bloodpressure readings. Regardless of the inherent accuracy of the apparatus, "tilting" will cause incorrect readings.
With the Lifetime Baumanometer, because of its wide bore mercury tube, any tilt is instantly detected and readily corrected. Moreover, due to its unique construction, a very appreciable tilt would be necessary to cause a consequential error. Every Baumanometer is individually calibrated and "leak proofed" to establish and maintain the mercury column at zero when placed upon a level surface... a factor designed to insure trouble-free bloodpressure service for the physician.
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ployed in one of the plants but part time physicians are employed in seven plants; full time nursing service is available in four plants and part time service in three plants; pre-employment examinations are required in 16 plants and periodic examinations are given in 16 plants; 10 plants are inspected regularly for hazardous conditions by the plant physician; 22 plants spent less than $100 on their medical programs, other than compensation cases, during 1941. Thirty-two of the remainder had no record of expenditure of this type; plant medical departments handled about 6,200 cases during 1941; 24 plants have a sick benefit association, and 30 plants have a hospital insurance plan; 23 plants signified their interest in having a physician make health talks to their employees; only 10 organizations stated that an industrial hygiene survey had been made in their plants during the past two years, but 75 expressed interest in having a survey made; 10 plants have venereal disease control programs, eight plants have dispensaries and two plants have cafeterias.

EVEN persons injured while collecting scrap metal—believe it or not—are now receiving free medical care. A Boston newspaper, without a trace of levity, tells the campaign casualties where to report for the largess of iodine and bandages. Next, no doubt, will come free ocular attention for eye-strain from following the war news.

—"Sidelight" in *Modern Medicine*, April.

AT AN N.A.M. sponsored wartime clinic on health in industry at Pittsburgh, April 14, attended by several hundred industrial physicians, business executives and others from six states, ANDREW T. COURT, labor economist of General Motors, said that absenteeism among the nation's factory workers was concentrated in a "chronic fringe" of 10 to 20% of the total working force—a fringe composed of the same individuals month after month. "By and large the great majority of our employees are losing no more time today than they lost before the war."

THE Nebraska "Blue Cross" plan is the Associated Hospital Service. It has been growing steadily for four years, and now protects over 17,000 people against the chances of sudden and unexpected hospital expenses. Just as in insurance, the members pay a small regular fee each month; then if hospital service is required, the association pays the hospital. It has a surplus, and everyone, hospitals, doctors, and the members, find it extremely worthwhile. In its four years of operation, almost 5,000 members have been hospitalized, with the resultant lessening of worry, reduction of tax burden for free cases, and the practical elimination of garnishees and attachments, also border line compensation cases.

—J. H. PFEIFFER, in *Nebraska State M. J.*, April.

IN INDUSTRIAL Health Series Bulletin Number One, issued by the U. S. Department of Labor, employers are urged to "constantly and continually emphasize personal cleanliness to the workers; provide washing and bathing facilities and individual lockers; and encourage change of clothes for work." Rules recommended for workers are as follows: "Keep the skin as clean as possible. Remove oils and grease with thorough washing. Avoid unnecessary contact with irritating substances and solvents which remove natural skin oils. Avoid self treatment. See a doctor, for each case requires different treatment. Apply for first aid for any cut or break in the skin no matter how slight. Report any skin symptoms promptly. Wear gloves, aprons, and other protective equipment provided. Use protective ointments supplied. Remember that cleanliness is one of the best safeguards against infection."

—*Lawrence, Mass., Tribune*, April 9.

IN 1942, despite war-time pressure, a substantial increase in hours worked and the employment of many newly-trained workers, the Camden Works of RCA Victor, nevertheless improved its already good record by reducing the frequency of lost-time accidents by 22% and the severity of such accidents by 2%. O. C. DOILEAU is Safety Director.

—*Liberty Magazine* press release.

THE hope that Virginia workmen's compensation laws can be amended so as to cover occupational diseases was expressed yesterday by Governor Darden. Speaking briefly at the first meeting of the legislative commission designated by the 1942 General Assembly to make a study of possible extension of the compensation act to take care of occupational ills, the governor said he hoped the commission's report would bring

NOTHING IS TOO GOOD FOR THESE MEN . . .

Seriously . . . any dietary extreme would be justified if it were necessary to ensure an optimal supply of essential vitamins for industry's workers.

For men doing hard physical work, an adequate daily intake of the vitamin B Complex is imperative if physical fitness is to be maintained.†

When vitamin B Complex is indicated as an addition to a ration, a natural product such as yeast would seem to be a source of all the necessary components.†

Specially prepared from selected brewers' yeast, Wyeth's Elixir B-Plex* is a palatable and potency-protected preparation of the richest natural source of the whole vitamin B complex. Each teaspoonful contains the water-soluble active constituents of 60 grains of high-grade brewers' yeast.

†JOHNSON, R. E.; DARLING, R. C.; FORBES, W. H.; BROUHA, L.; EGAÑA, E., and GRAYBIEL, A. (The Fatigue Laboratory, Harvard University and The Thorndike Memorial Laboratory, Boston City Hospital, Boston, Massachusetts): The Effects of a Diet Deficient in Part of the Vitamin B Complex Upon Men Doing Manual Labor, J. Nutrition 24: 585-596 (Dec. 10) 1942.

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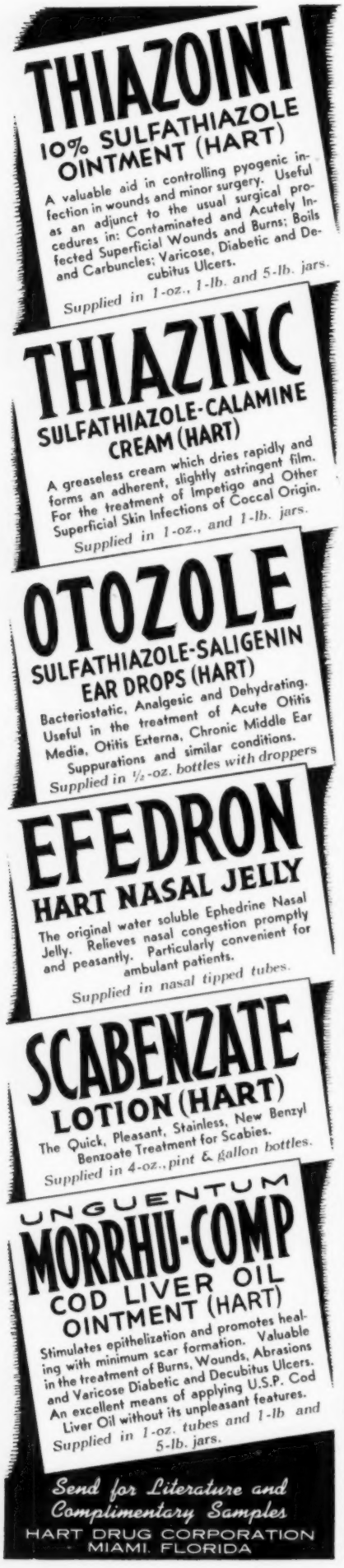
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A valuable aid in controlling pyogenic infection in wounds and minor surgery. Useful as an adjunct to the usual surgical procedures in: Contaminated and Acutely Infected Superficial Wounds and Burns; Boils and Carbuncles; Varicose, Diabetic and Decubitus Ulcers.
Supplied in 1-oz., 1-lb. and 5-lb. jars.
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SULFATHIAZOLE-CALAMINE CREAM (HART)
A greaseless cream which dries rapidly and forms an adherent, slightly astringent film. For the treatment of Impetigo and Other Superficial Skin Infections of Coccal Origin.
Supplied in 1-oz., and 1-lb. jars.
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Bacteriostatic, Analgesic and Dehydrating. Useful in the treatment of Acute Otitis Media, Otitis Externa, Chronic Middle Ear Suppurations and similar conditions.
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COD LIVER OIL OINTMENT (HART)
Stimulates epithelization and promotes healing with minimum scar formation. Valuable in the treatment of Burns, Wounds, Abrasions and Varicose Diabetic and Decubitus Ulcers. An excellent means of applying U.S.P. Cod Liver Oil without its unpleasant features.
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some such changes. The present workmen's compensation law covers injuries suffered in occupational accidents but does not provide compensation for illnesses or diseases attributable to occupational reasons.

—*Richmond, Va., Times-Dispatch*, April 6.

HOUSE and senate compromised on an occupational disease bill and sent it to the governor. The measure eliminates a provision permitting trial by jury of an appeal by a claimant, sought by labor, but restores a section providing for a board of medical examiners to determine the nature and extent of the disease. Senator William Walsh, Marshfield, who drafted the original compromise, said the measure would cover 95% of the cases that will arise in hazardous industries. Several senators and representatives, expressing dissatisfaction with the bill, admitted that it was "better than nothing" both for employers and employees, but indicated that additional legislation will be sought in the 1945 session.

—*Portland (Ore.) Oregonian*, March 11.

INDUSTRY also is awake to the danger of lurking tuberculosis. In some places management is providing chest x-rays for employees and labor organizations are making chest x-rays available to their members. Under a cooperative program of the Industrial Hygiene Division of the State Department of Health and the New Hampshire Tuberculosis association this service is to be greatly expanded this year. No one in the whole community can be safe against sabotage by tuberculosis until every case is discovered and placed under medical care for cure and prevention.

—*Manchester, N. H., Lead. & Eve. Un.*, April 7.

COMMENT and OPINION

MELLON Institute estimated in its annual report released April 10 that sickness was the greatest cause of absenteeism and kept the average worker off the job eight days each year.

IN THE December, 1942, issue of the *Alabama M. A. Journal*, Dr. J. S. Hough stated that a woman needs a minimum of from 20 to 28 months between childbirths, and that child-spacing instruction should be given to all women in industry. D. Kenneth Rose, national director of the Planned Parenthood Federation, recently announced that such instruction is now included in the general health programs of 15 war plants employing large numbers of women.

WOMEN are proving excellent workers in the wholesale drug industry," C. A. Loring, of Gilman Bros., Inc., maintained. "It is our observation that women in general take more interest in details than do men, and perform monotonous tasks over longer periods of time without losing interest. While they are absent more frequently, they are more conscientious about calling up and informing the management when they are out."

PROJECTING past statistics into the future, B. B. Geyer, president and chairman of the board of Geyer-Cornell & Newell, New York advertising agency, turned soothsayer today (April 15) when he addressed the special war meeting of the National Wholesale Druggists' Association at the Palmer House, Chicago. Geyer presented charts he described as "reasonably accurate from a factual and statistical standpoint" but "only indicative" when projected into the future. With these charts as guides, he predicted victories in Africa and Russia by July of this year; a six-months blitz on Germany, with the collapse of Germany in October 1943; an Allied victory in Burma three months later; and, after nine months of preparation an attack on Japan and the Islands, a final Allied victory November 1, 1944. To his military predictions, Geyer added the political forecast of an anti-New Deal election in 1944.

—Wholesale Druggists' Association release.

OLD MEN, women, the handicapped, and veritable youngsters are being taken into industry. And these people who lack physical adaptability and experienced work-habits of the men who have gone into service are laboring harder and for longer hours than heretofore. That is a challenging introduction to the present-day industrial hygiene program if ever there was one.

—*Am. J. Pub. Health*, comment on "Government's Obligation in Industrial Health," by W. F. DRAPER, in *New England J. Med.*, February 11.

SOMETIMES the changing of a sequence in operations will eliminate an accident hazard. A case in point occurred only recently. It had been the practice to "Parkerize" gun cleaning rods before assembling the brass tip which holds the cleaning cloth. A small quantity of the caustic solution remained in the threads of the tapped hole in the end of the rod. When the girls screwed the brass tip in, the caustic solution was squeezed out and got on their hands and sometimes in their eyes. By assembling the rod and tip first, then "Parkerizing" afterward, this hazard was eliminated.

—From "Taking Plant Hazards Apart," by SYDNEY INGHAM, Safety Director, Springfield Armory, in *Industry*, April.

I REMEMBERED that Sue had spent long hours learning about compensation, employment laws, occupational diseases, and a number of related subjects, and I asked her if the new nurses had to learn all these things. "There is usually someone here who knows them, but every

nurse has to have, or should have, enough knowledge so that she can judge what to report. I never will live down the mess one of them got us into by deciding that the rash an employee reported was 'nothing.' She gave him routine treatment and by the time it was properly diagnosed as an occupational dermatitis we had three other men with the same trouble and were weeks trying to find the cause and stop it."

—From "Labor's Day," by ROXANN, in *R.N.*, March.

"WE DON'T even keep a record of absenteeism. We don't have any."

—C. S. CRAIGMILE, executive vice-president, Belden Manufacturing Co., Chicago, quoted by LOIS THRASHER, in *Chicago Daily News*, April 21.

MISS ROSABEL BURCH, regional representative of the Office of Defense Health and Welfare Services, said her office was trying to elminate the kind of industrial nutrition programs in which workers are served "soda pop instead of milk." Her three-point program included high nutrition levels for workers in the plant; education of the workers' families; and education in food supply. The nutrition yardstick, she said, should be the well balanced meal. She advocated that industries be "practical" in planning meals. The reaction of one group of workers to raw-vegetable sandwich filling, she said, was "what are they trying to do; turn this shipyard into a tea room?"

—*Stamford, Conn., Advocate*, March 29.

EMPLOYERS should recognize that workers who have old, arrested and clinically non-significant tuberculous scars in their lungs present almost as little risk as the non-tuberculous workers. In some instances, old experienced key workers have been discharged following the disclosure of such lung scars by plant x-ray surveys. This practice, we are all agreed is unsound—medically and economically wasteful. Employees who have fallen ill with tuberculosis and are successfully treated should be returned to their old jobs under medical supervision when those jobs are suitable and when medical opinion finds the employee capable of full-time work.

—LOUIS E. SILTZBACH, M.D., in *Milbank Quarterly*, January, quoted in *Illinois M. J.*, April.

ANY harmless or transient physical ailment can provide for the troubled mind a welcome straw to grasp. In actuality the workman becomes an absentee when he leaves his job. That act, however, is only the last step, the one which separates him physically from his job. On investigation it will be found that for some time previously he has been an absentee in his own mind. What drove him to leave his job? If we ask him, he will always supply obvious reasons. Either it will be the environment or some physical ailment, acute or chronic, or fatigue or pain

How to help keep MEN AT WORK!

FEEDING great numbers of workers in a short space of time puts a strain on even the best of housekeeping intentions. When the rush is on, adequate health protective measures may break down. Serving in individual Dixie paper cups and containers can do a lot to prevent that danger... prevent possible contamination from improper sanitizing. The cleanup for the next shift is reduced to a few minutes.

★ Another Danger Point to Watch

Much sick-absenteeism is caused by colds, sore throat, "flu" and other easily communicable diseases. Just as important as proper protection in feeding is freedom from contamination at the drinking water source. Mouth contact with anything that has touched the lips of others can be dangerous. Dixie and Vortex paper cups check contagion at this source.

Dixie-Vortex paper cups and containers are made at Easton, Pa., Chicago, Ill., Darlington, S. C., and Toronto, Canada.

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Down through the years our PAX laboratory technicians have established an enviable record of "firsts." We first introduced lanolin as a cleansing emollient in a powdered hand soap for industrial plant workers. We developed the vegetable "flat-type" scrubber. And we introduced the now famous Safety Trio features: (1) pH below 10; (2) NO Free Alkali, (3) Low, buffered Alkaline Salts.

Our PAX laboratory technicians have developed specialized skin cleansers for types of war industry where peculiar dermatoses conditions threatened production. Today, PAX formulas are meeting . . . and beating . . . dermatoses in scores of key war plants.

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or exhaustion. A more thorough investigation, however, may show up absenteeism as an evidence of emotional conflict. Further examination may reveal that we have here a personality problem at hand which involves certain character types.

—From "Mental Instability as a Cause of Absenteeism," by FELIX DEUTSCH, M. D., in *Industry*, April.

THERE was a young soldier who had a bursa under one of the hamstrings about the size of an egg, according to his history, and which had never bothered him at his work, but which when he got into the army began to irritate him. We excised it without breaking it, giving him the sulfathiazole from the day before in the same way as we did in the knee cases. And we found that the sulfathiazole level in the fluid in this bursa was almost up to the blood itself, showing how the drug does go through the body, and how there is an interchange at all times. I believe that this seems to have some definite bearing on the treatment of joint injuries with potential infection.

—From "War Surgery," by WALLACE H. COLE, M.D., in *California & Western Med.*, April.

INDUSTRIAL hygiene is another subject the importance of which has been greatly increased on account of war activities, with its multitude of new processes, new chemicals and combinations, all of which are closely related also to the housing problem and migration of workers. *Occupational Diseases*, by Rutherford T. Johnstone, Saunders, is useful to the general practitioner as well as specialists in the field of industrial medicine. Its publication is very opportune in this time of national emergency. *Eye Hazards in Industry*, by Louis Resnick, Columbia University Press, has been published for the National Society for the Prevention of Blindness, and is timely in view of the increase in industrial accidents during the last two years as reported by the Bureau of Labor Statistics and the National Safety Council, which say that 300,000 eye injuries occurred yearly in industrial fields, costing employers and the injured workmen more than 100 million dollars. It is held that only 2% of this enormous loss may be considered as unavoidable. The book can be highly recommended.

—*Am. J. Pub. Health*, April, 1943.

THERE IS, of course, another side. There are workers, socalled, who wilfully and determinedly play hookey. They work just enough to stay on the payroll; and sometimes not even enough for that. They are in the minority, but a subversive and even dishonest minority. More than 200 employees of an arsenal were dismissed because of habitual absenteeism. Investigators visited the homes of workers absent from the job without permission and found that more than half had no valid excuse. Half were men and half were women. "Many of them," said one official, "have stayed away weeks without letting us know why, but they continue to stay on the payrolls." It won't be so easy at that arsenal from now on. The investigations will continue. Workers on sick leave whose claims are found to be fraudulent will have charges preferred against them. Those absent without good cause will be dismissed with prejudice, which means they can not obtain a job at another war plant.

—*Rutland, Vt., Herald*, April 12.

OF ALL the steps in introducing women to occupations formerly assigned only to men, the most delicate is that which inducts them into the skilled trade groups, such as welding, lathe operating, milling, drilling, etc. The improper introduction of women into this sphere can become a boomerang and create such dissatisfaction as to offset the advantages of such a plan. From the applicants referred to us we selected the older women—that is, those over 40. At the beginning we felt that the older women would display a greater sense of responsibility and be able to cope with the problems of adjustment better than less experienced girls. How did the men like all this? Well, for the first few hours there was naturally quite a lot of speculation and comment, but since we had discussed our plan with some of the older employees in the department and with the employee representative of the room, there was not quite the disruption we had anticipated. Our experience with the women in the tool rooms was such a happy one that we decided to try to find laboratory assistants who could be trained to do metal testing, also to

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Clinical observations indicate that a Johnson's Red Cross Plaster is beneficial in the treatment of muscular aches, stiffness, wrenches and strains. The effects of this approved medicated plaster are attributed to warmth, anodyne effect, physical support and passive massage. Try one on your next case.

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When They come Marching Home
Many a soldier who comes home again will owe life or limb to the deft hands of an army surgeon . . . a surgeon who was there when needed. And, like as not, among the superb physical resources at the operator's command were Sklar surgical instruments—for Sklar instruments today follow our military men-in-white all over the globe.
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Because of the great war demand, instruments available for civilian use are scarce. Tell us your most urgent needs—we will do what we can to supply you. Conserve and protect the instruments you now have—they may have to last a long time.
IN THE SOUTHWEST PACIFIC AREA

employ women to do chemical analysis on solutions used in the process of fabricating brass.

—ELLEN DAVIES, personnel manager, Chase Brass & Copper Company, in *Connecticut Industry*, April.

POINTING out an aspect of absenteeism calculated to stimulate management efforts to overcome the problem, Andrew Fletcher, vice-president of the St. Joseph Lead Company and chairman of Industrial Hygiene Foundation, said: "I am perfectly positive that if companies will start to convert their absenteeism loss into dollars and cents, the absenteeism can be reduced from well over 5% to approxmately 2%." Mr. Fletcher said he did not believe a cut below 2% possible, attributing most absences to sickness and only 10% to industrial accidents. Mr. Fletcher's theory is this: If a company finds absences of one day or more are 5% of payrolls, and yet production is being maintained, it means you are carrying 5% extra men on your payroll. There is no doubt about that. Otherwise you could not maintain your average production." Indirect costs of sickness, he added, although unknown, also appear large, since a man does not work efficiently just before or just after he lays off because of sickness. These indirect costs were estimated at three times the direct costs. Research into this major cause of absenteeism disclosed that skin ailments were the most common of occupational diseases, partly due to introduction of unfamiliar and new chemicals into manufacturing processes. These substances flow from laboratories into industries, promising valuable applications and improvements, but they may possess toxic properties that must be controlled. Solving such problems, among them irritating dusts and fumes, tends to improve labor relations coincidentally with fostering healthful working conditions.

—*New York Sun*, commenting on Mellon Institute's annual report.

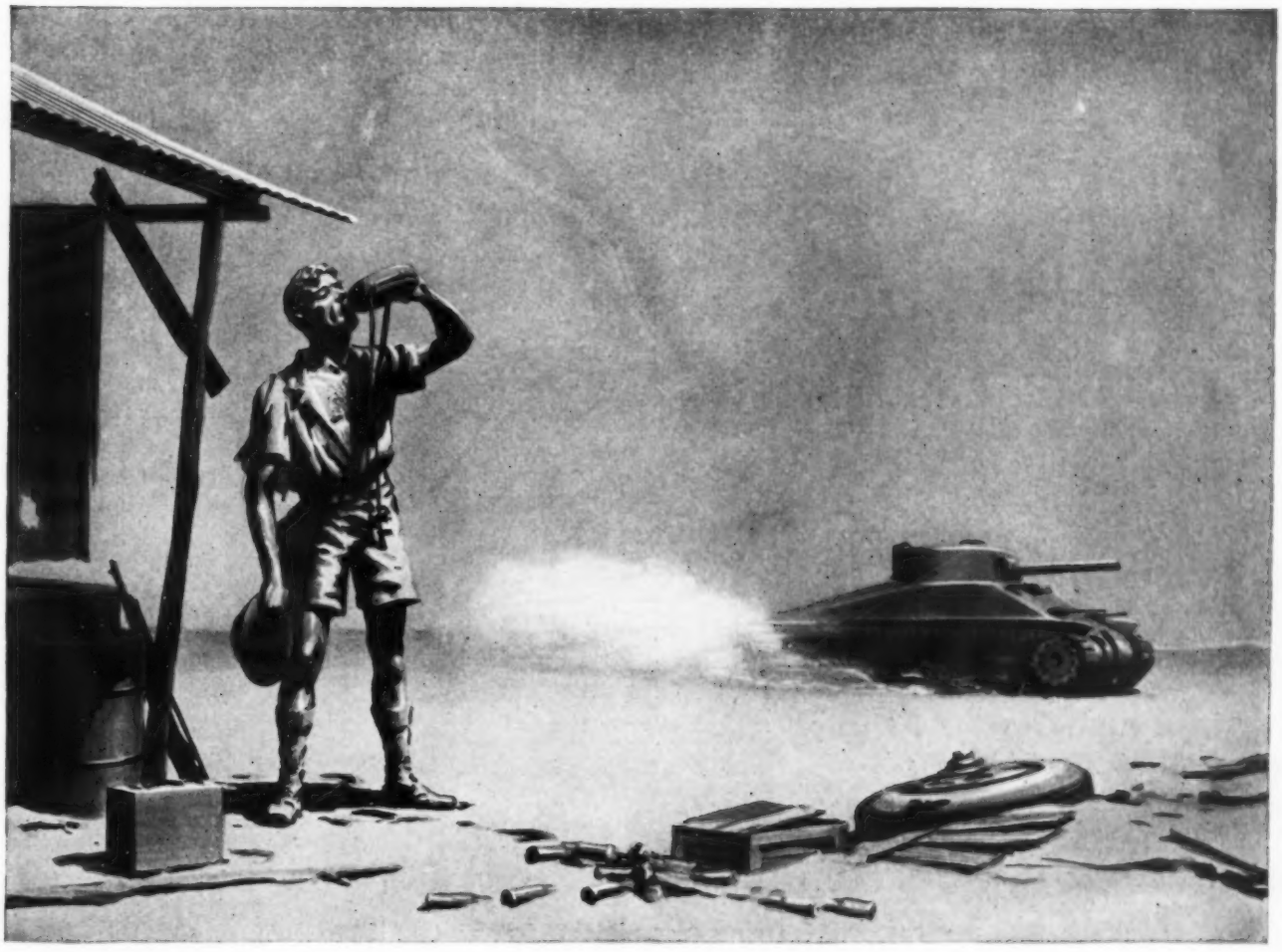
THE distinguishing characteristics of morons are mental and emotional asymmetry. Morons lack stability, will power, self control and understanding. They cannot and will not deny themselves. Certain individual morons may and not infrequently do exhibit abilities of a high order in one limited domain or group of facilities, with, at the same time, not only complete emptiness in other directions but instead, strange, perhaps morbid impulses, being swayed by counter forces or mental obliquities of a dangerous order. Such are sometimes seen and heard at chautauquas, or as leaders of strange cults. Morons are vacillating, irresolute, indecisive, they cannot say no, and they are forever making mistakes. They are of adult age but have the brains of children, and constitute fully 50% of our population.

—From a biography of DR. JOHN N. HURTY, president A.P.H.A. in 1912, by THURMAN B. RICE, M.D., in *Monthly Bulletin Indiana State Board of Health*, March.

TODAY, however, with "every third customer in a drug store purchasing a vitamin preparation," the general topic of vitamins and hormones received special attention at the convention as far as future planning is concerned. "We believe that the development of vitamins has and will continue to prove a boon to humanity" E. Walton Bobst, assistant to the president of Hoffmann-LaRoche, Inc., Nutley, N. J., declared. "If animals, as has been proved, become emaciated, with scraggly fur, covered with sores, and decayed teeth because of insufficient vitamin intake, it is our belief that human beings are likely to suffer in the same manner from vitamin deficiencies. Even with the fantastic quantities of vitamins now being manufactured, it is a difficult matter to keep up with demand. We are still a long way off in our own country from providing against vitamin deficiencies. The teeming millions of people living in war-torn countries of the world are sadly in need of vitamins."

—National Wholesale Druggists' Association release.

AS A SOLUTION of the problems of industrial absenteeism and health, the State Health Department today proposed the formation of Victory Committees to act as a cooperating agency between management and workers. "By this program management and labor will unite in studying the causes and cures for absenteeism. The causes and cures may differ in every community, in every plant, even in every worker, and this program offers a method of molding the solution to fit the individual." DR. J. LYNN



VALUE DEPENDS ON THE OCCASION

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The value of 'Lyovac' Normal Human Plasma is always assured because this preparation is *stable*, *portable* and *practical*.

Each unit provides the osmotically active proteins as well as the antibodies, complement and other life-giving elements present in 250 cc. of fresh human plasma obtained from 500 cc. of whole blood.

Stability is obtained by quick freezing, followed by dehydration and storage under vacuum in flame-sealed glass vials. The desiccated plasma is simply restored by addition of sterile, distilled water. Hypertonic (concentrated) solutions can be easily prepared.

Stable, portable 'Lyovac' Normal Human Plasma can be kept safely without refrigeration wherever treatment of shock may be required . . . in accident room or ambulance, operating room, delivery room or office, in first-aid stations and mobile disaster units.

Each 250-cc. unit provides approximately as much osmotically active protein as 500 cc. of whole blood, and—since 'Lyovac' Normal Human Plasma represents pooled material from fifty bleedings—it may be administered at once without typing or cross-matching.

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'Lyovac' Normal Human Plasma is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Each unit includes distilled water and complete apparatus for restoring the desiccated material. Sharp & Dohme . . . Philadelphia, Pa.

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PRESENCE OR ABSENCE OF URINE SUGAR DETERMINED

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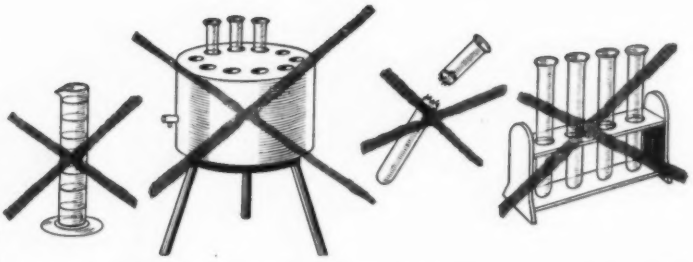

1. Galatest — the convenient dry reagent for urine sugar analysis — has the advantages of both *speed* and *simplicity*.

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- **No Test Tubes**
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HERE'S HOW TO MAKE A COMPLETE URINE SUGAR TEST—*INSTANTLY*:

1. A little Galatest powder
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And that's all there is to it!

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MAHAFFEY, state health director, said the first essential would be the careful selection of committee members. "Not just everyone should serve," he said. "To succeed, it must have men and women from the hourly payroll who have constructive ideas, who know the plant people, who are familiar with company and worker policies, who are sold on good health, and who will 'put out' to help win the war. In no less measure, its success depends on wholehearted support by management—not silent approval, but vigorous promotion from the plant manager down to the foreman. Responsibility for plant help cannot be eased off the shoulders of management in unison toward avoiding illnesses and other absences, and toward shortening those that do occur."
—*Trenton, N. J., Times.*

NORWICH PHARMACAL COMPANY has a nice idea. With 115 men in the service, the company maintains a "Secretary Sue," who corresponds with all of them regularly, sending a general letter to each every few weeks and replying individually to every letter she receives from them. The company recognizes promotions of its men in the armed forces by providing for payment to them of $10 for each promotion where the base pay is less than $100 per month, and, where it is more, sending the company's check for 10% of one month's base pay. The plan is retroactive for all promotions since the first of its men went into the service.

Questionnaire

MADDENED the other day by a new questionnaire that demanded answer (the sixth in line on entirely similar subject), we took advantage of our moments in high blood pressure to find out how the word might be spelled or where in the hell the idea of it came from anyway. There isn't enough space in these columns to detail all our findings in this etymological, anthropological, legal and literary research, but the following note may not be without interest. The word is not to be found in any of the dictionaries we have at hand, specifically, Webster's *Secondary-School Dictionary*, New York, 1913; Roget's *International Thesaurus*, New York, 1924; Collins, *Authors' and Printers' Dictionary*, London, 1933; Whitney and Smith's 12-volume *Century Dictionary*, New York, 1911; *Concise Oxford Dictionary*, Oxford at the Clarendon Press, 1918; the 13-volume *Oxford English Dictionary*, Oxford at the Clarendon Press, 1933. We nosed out a hot scent in consultation with Fowler *(Modern English Usage*, Oxford 1927). He begins in indecision as to whether spelling should be *questionnaire* or *question(n)aire*. (Personally we don't give shucks—believing as we do in the Elizabethan school of orthography.) But Fowler got us back on the track by informing us that this fool word was the equivalent of the old English *questionary*. Looking it up, we find that it derives from late Latin, meaning "a torturer or executioner, also an examiner, a judge, a solicitor of alms, a begger." That's enough; except for this query: Which of these designations fits the author of any questionnaire? what kind of a guy is he? and where within the meaning of the word, does he live and operate?
—*Southwestern Medicine*, April.

THE health program should include: (1) First aid, medical and surgical care for all industrially induced disability; (2) correlation with the family physician and other health agencies for the proper management of non-occupational sickness or injury; (3) physical examination of workers and health education; (4) records of all cases of absenteeism as a guide to preventive measures. The woman worker should have the same clothing protections as the man, with the customary protection for the eyes, hands and hair and in general she should wear comfortable low-heeled shoes. Adequate lighting and ventilation and adequate toilet facilities including rest rooms must be provided. Rest periods are desirable. One of the problems to be solved in female labor is that dealing with menstrual disorders and the menopause. The plant physician can do much to solve this problem and rest periods are of real value. Pregnancy also complicates the efficiency of the assembly line. Stresses and strains must be eliminated. Pregnant women should have a regular shift of employment so that they may regulate their life

TESTED BY FLAME . . . PROVED BY RESULTS

ALL theoretical considerations aside, proof of the safety and efficacy of a burn preparation rests solely upon its action when used on burns and scalds.

CALOE OINTMENT (Cole) has a remarkably consistent record of successful trial by fire. Extensive laboratory and clinical tests have established its outstanding safety and value for the local treatment of burns and scalds and as a vulnerary to aid healing of wounds.

Consisting of 15% aloes (U.S.P.) and 5% chlorbutanol (U.S.P.) in a special petrolatum and calamine base, CALOE OINTMENT (Cole) is easily applied on bandages that may be readily and painlessly removed after the requisite periods of treatment.

Definitely analgesic, with rapid pain relieving action, CALOE OINTMENT is effectively astringent and styptic. Purulent surfaces soon become clean. Healing is hastened and the burned areas remain smooth and pliable. Men return to work sooner, their efficiency and skill not impaired by dense scar formations.

CALOE OINTMENT (Cole) is supplied in 1 ounce and 1 pound containers. For liberal trial quantity and pertinent literature, just fill in and mail the coupon below.

CUT "Hangover" ABSENTEEISM

A man suffering from "hangover" is of little value on the production line. However, there is no need to send him home when his symptoms can be so readily relieved by Cole's BRAL. A balanced formula of three bromides, acetylsalicylic acid and caffeine alkaloid, BRAL quickly relieves headache and general malaise, quiets jittery nerves and helps restore efficiency.

Try BRAL and keep the men on the production line.

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Gentlemen: Please send me pertinent literature and samples of BRAL and of CALOE OINTMENT.

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NOW PROTECTION *for the* HANDS *of industry*

That Offers A DOUBLE Safeguard Against Occupational Dermatitis

Extensive studies reveal that soaps and improper use of cleansing agents are as equally responsible for dermatitis as industrial irritants. You will find LOWILA PASTE a simple, as well as practical aid in the control of this saboteur of man-hours.

1. LOWILA PASTE not only forms a tough, non-greasy, *antiseptic* film between the skin and irritating substances, but
2. This film is itself a non-irritating detergent, only slightly de-fatting, which upon simple rinsing carries away dirt and grime with it.
3. In fact, LOWILA PASTE is recommended by dermatologists in the treatment and prevention of dermatitis due to, or aggravated by use of soap.
4. So mild it may be used on the face, too, to protect against air-borne irritations.

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for the greatest amount of rest and regular sleep. If her employment is improper, the patient must stop work or be transferred to more suitable activity. The pregnant woman should not be employed later than the seventh and one-half month. If mothers are employed, arrangements must be made to provide suitable facilities and properly trained attendants to care for dependent children. Children attending should need adequate supervision before and after school hours to assure adequate diet, clothing and other protections. Yes, there are problems when women go to work."

—Dr. Paul H. Brown, health commissioner, quoted on "Women at Work," in *Stamford, Conn., Advocate.*

Tuberculosis Surveys

Seventy-seven war industries in 11 different states were surveyed by the eight 35-mm. photofluorographic units operating in industry prior to February 1, according to the Office of Tuberculosis Control of the U. S. Public Health Service. A total of 194,896 individuals were x-rayed. Tabulations on results of the x-ray examination are available for 125,190 people. Of these, 1,631, or 1.3%, were found to have significant pulmonary tuberculosis. The distribution of the positive cases by stage of the disease was as follows: 874, or 53.6%, minimal; 707, or 43.3%, moderately advanced, and 50, or 3.1% far advanced. In the District of Columbia 28,098 government workers have been x-rayed. Exactly 300 cases (1.1%) of pulmonary tuberculosis have been discovered. Of these 182 (60.7%) were minimal, 106 (35.3%) moderately advanced and 12 (4.0%) were far advanced. In addition, 1,300 workers at the National Institute of Health have been x-rayed. Among these, 15 cases of tuberculosis were found, nine minimal and six moderately advanced.

In a world as shaken and shocked as is ours, psychiatry must inevitably play an increasingly important part. Civilian populations, untrained to war, have suffered the full fury of enemy attack in many countries, and even in those countries as yet unbombed, anxiety and insecurity add to the mental strain of living in a war-torn time. In such a situation one would expect a large number of psychoneurotic casualties in the civilian population. Actually, so far, the contrary seems to be the rule.

The most complete reports have come from England. In that country, normal, stable persons have continued to function without hysteria or panic. In cases where they have been exposed to some particularly terrifying incident, symptoms of shock have resulted, but recovery in the majority of cases has been rapid and complete. Children seem to have been more disturbed by evacuation and by the consequent separation from their parents than by bombing. Unstable elements of the population reacted as they would to any crisis —no more, no less. Most actual mental cases showed an abnormal lack of reaction. In general, over the whole population morale has remained high. The British people have been stimulated by the actual presence of danger as contrasted with the dread unknown evil, and they have been fortified by the discovery that they could endure without flinching the worst the enemy could offer. One, must however, accept these encouraging reports with a measure of caution. It is likely that the full bill of nervous strain and disease resulting from the war has not yet been rendered. Hidden strains and injuries, obscured in the excitement and activity of the present emergency, will doubtless be discovered when the emergency is ended. The real effects of the war years will not show until the present pressure is lightened.

—From "The Rockefeller Foundation, A Review for 1942," by Raymond B. Fosdick.

Foremen, either alone or in cooperation with personnel men and labor-management committees, wherever the latter exist, can show a reduction of 50% or better of inexcusable absences. The fact has been demonstrated already in a number of companies, including several in Connecticut. The so-called excusable absences, like various types

GEARED
—once more, to a War Economy

FOUNDED way back in the pre-Civil War year of 1860, the R & C Laboratories early established a tradition of wholehearted adjustment to the stringencies and challenge of a war economy. Reconstruction days . . . the Spanish-American War . . . World War I—these are indelibly woven into the fabric of our long history.

Today, Reed & Carnrick has gone "all out," even more than ever before, in gearing its operations to the national emergency. Not only has it provided many of its personnel for the war effort, but also many manufactured pharmaceutical products for the armed services.

This expression of national service is but a reflection of our policy of professional responsibility . . . a policy that, throughout all these years, has assured an unswerving loyalty to the tenets and ideals of the medical profession, through the preparation of exclusively ethical products.

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The application of an entirely new principle in burn treatment which incorporates respiratory-stimulating and proliferation-promoting concentrates.

BIODYNE OINTMENT is a sterile dressing designed specifically for the treatment of burns and wounds. Its development resulted from a long series of basic studies of cellular growth and metabolism at the Institutum Divi Thomae of Cincinnati under the direction of Dr. George Speri Sperti — and represents a new concept in the treatment of burns and wounds.

The chief advances in burn therapy, represented by the ointment, reside in the incorporation of the respiratory-stimulating and proliferation-promoting concentrates. These are natural cellular products, prepared in the former case from yeast and, in the latter, from animal and fish livers. They belong to a group of natural substances, generated by cells, which participate in the regulation of cellular growth and respiration. These substances have been termed "biodynes" (from the Greek words for life and force), whence the name of the product.

It would seem desirable to maintain normal respiratory metabolism during the treatment of lesions. Germicides, which are desirable to maintain sterility of the lesions, may slow the healing process by their toxic action on the tissue. Biodyne Ointment therefore contains a concentrate of natural respiratory-stimulating factors which offsets the respiratory depressing action of the germicide without sacrificing germicidal efficiency.

As the result of years of observations by competent physicians, it has been established that Biodyne Ointment, without the incorporation of a local anesthetic, relieves pain.

End results show a soft but firm epithelization spread over the lesions, throughout which can be seen networks of fine capillaries, indicating that proliferation of the several layers of the derma has taken place. Glands and hair follicles may regenerate if their cells have not all been destroyed. Scar tissue and keloids are minimized.

5D8036—Biodyne Ointment, in one-ounce tubes, per dozen . . . **$7.80**
In 1-pound jars, per pound **5.50**
In 5-pound jars, per pound **4.30**

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of illness and accidents which account for approximately 50% of all absences, have been materially reduced by action of management in establishing a first class health department where men and women may receive free examination and advice before they actually become too ill to report for work, or which may assist in reducing lost time from illness or accidents. Since much illness is caused by mental conditions either in the worker's family or in connection with his work, it is just as important to undertake to remove the causes as it is to furnish health provisions. Anything which may be done to make the hours of work more interesting will pay handsome dividends. For a company to take its employees into its confidence on many matters pertaining to the business is a great morale builder. It increases confidence on the part of the employees and makes for loyalty, increased production and less time lost. Accident prevention programs, already functioning to good effect in many plants to reduce the number of accidents inside the factory and out, may be intensified where now in effect and inaugurated in many plants where too little attention has been given to the serious implications of lost-time accidents. What price absence? No one knows definitely. It may have meant the loss of battles already. It will most certainly mean a delay in building the tools that will win the war, which means more of our boys will die because of lack of the war implements which we didn't make fast enough. It means, too, that millions of men have lost many more millions of dollars that they might have invested in war bonds for the purchase of some useful items after the war. Everyone may also have less to eat because of it. Whatever the causes of absence from work, we of management and labor can reduce the toll by millions of man-days, many lives and dollars if we will but tackle the job with the same drive now being demonstrated every day by our boys in Africa and on other battlefronts on the high seas and in the Far East.

—ALFRED C. FULLER, president, Manufacturers' Association of Connecticut, in *Connecticut Industry*, April.

FIRST of all the plant physician must be thoroughly familiar with all the types of work done in the establishment, and with the physical requirements of these positions. Without this knowledge he can not be in a position to judge who is fit for what job. This particularly applies in organizations where the jobs vary from manual labor to skilled work requiring very little brawn. In the second place, the physician must know for what type of position each individual is applying. To employ a man of 65 as a laborer is to invite trouble, and similarly, to put a 35 year old physically fit person on a job as a watchman is a waste of valuable man-power. No routine, standard form can be set up for each type of work. The simplest method that works to the best advantage is a complete form with special attention paid to those items particularly applying to the type of job. For a laborer, vision, hearing and an examination of the nervous system are far less important than age, type of work previously done, an examination of the heart, blood pressure, and the presence of a hernia or incapacitating physical defect. In an office worker, vision and hearing are important items, since obviously frequent headaches due to poor eyesight result in lost hours of work or at least lowered efficiency. For a skilled worker at a vital job, a stable nervous system is an important consideration, while a postpoliomyelitic paralysis of a foot or leg may be of no consequence. For the plant protection force the presence of active or latent syphilis is more than of passing interest. One doesn't relish the thought of an early CNS syphilis carrying a loaded gun.

—From "The Pre-Employment Physical Examination," by ASHER RANDELL, M.D., in *Ohio State M. J.*, April.

SERVEL INC., Evansville, Indiana, on April 12 inaugurated a cooperative plan developed by employees and management to reduce absenteeism. This is in the nature of an attendance contest with merit awards offered for outstanding records on the part of individual workers, departments and divisions of the company. It is being organized and directed by the Production-Promotion Committee. Attendance awards for workers will consist of two classifications: one for six months and the other

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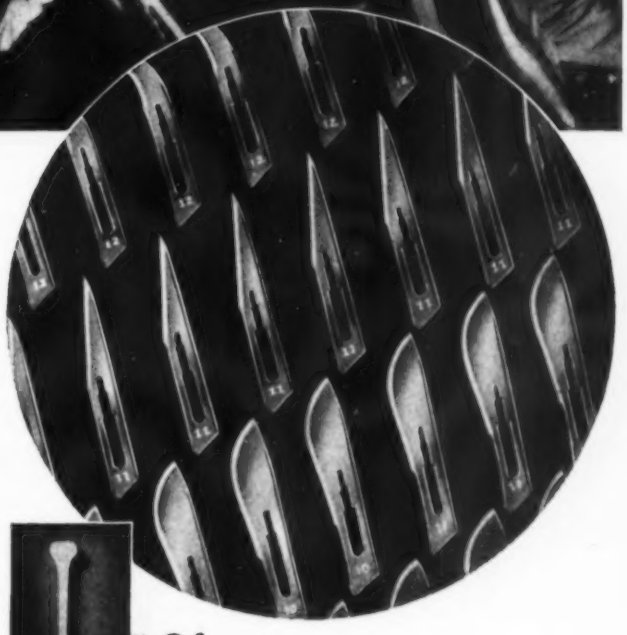

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for 12 months. All employees of the company are eligible for either or both awards. Workers having a perfect attendance record for six months will receive a leather billfold and memorandum pad on which are inscribed the worker's name and record. In addition, the worker will also have his name placed on the department's honor roll. Employees having a perfect attendance record for 12 months will receive a bar to be added to the War Worker's Wing pin. All employees achieving this recognition will also have their names placed on another department honor roll. To put real competition into this plan, each department will compete for the monthly plaque which will be awarded to the best department in each division for attendance records. As each department wins the plaque, its name will be inscribed thereon. The plaque will be in the permanent possession of the department winning it the greatest number of times within a year. To acquaint all employees with the rules and aims of the contest, the Production-Promotion Committee has prepared an announcement which is included with the current issue of *Servel Inklings*. Under the terms of the contest, absenteeism is considered on any full work-day in which the employee has been absent from work either with or without permission. If an employee is absent due to some circumstance beyond his control and reports for work before his regular shift is half over, the time lost shall not be counted as absenteeism in the contest.

ONE might like to assume that human beings could be separated, like the bees, into groups that could be defined and labeled as workers or drones. Although there are undoubtedly many human beings in both these categories, there also are many who are subtly placed in between such groups. As one visualizes the various shades of people represented among his acquaintances he discerns certain behavioristic patterns that would bear heavily on the incidence of absenteeism in their industrial employment. There are the hard workers, those who—sick or sore—report for duty punctually, and, so long as they can stand on their feet, deliver their full measure of effort. Next there are those who absent themselves only when they are definitely sick and who return at the earliest possible moment to steady employment—the "conscientious" people! Next are those who are "spleeny," who make the most of whatever illness they have and manage to make a good deal of some illnesses that they do not have. Then come the willful absentees—those who cannot recognize either our national perils or our national opportunities as their own. They may be motivated by excessive selfishness or deficient intellect, and they rationalize their absenteeism by all sorts of sophistries. For example, one is quoted as saying, "They won't give me a vacation, so I've got to take it myself." Many are undisciplined, unaccustomed and frankly unsuited to the work they are attempting to accomplish in industry, including those who are laboring in factories for the first time and those who are desperately trying to make themselves useful in fields to which they have not been and never will be naturally adapted. Lastly come those on whom the world has bestowed such adjectives as "lazy," "incompetent" and "inadequate"—the people who in normal times are unable to obtain or hold a job of any sort. Because sickness is the only indisputable status with which to explain most absenteeism, the physician's association with all these factors is close and decisive. Doctors have long been called on to certify that overwrought students are nervously or otherwise ill at the moment they face a critical examination. The cutting of classes for hours and sometimes for days preceding an examination has been frequently observed in school and college. There is a sort of epidemiology to this kind of behavior, academic outbreaks of which can often be satisfactorily analyzed. Industrial absenteeism is not so readily studied or understood, however, because the basic groups concerned have fewer common denominators than have the semi-disciplined

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student bodies. The rapid labor turnovers of today also mitigate against an understanding of the underlying mechanisms. Nevertheless, alarm is being expressed over the effect that absenteeism is already having on war production, and an effort to deal sternly with it may come at any time. When it does appear, the physician is apt to find himself in the vortex of many a little cyclone.

—From an Editorial "Absenteeism in Industry," *New England J. Med.*, April 8.

IN SUMMARY may I say that: (1) It is evident that neither the American people nor Congress will support a national compulsory health program at this time. (2) A cash indemnity program for medical and hospital care is not sound and Congress will not support it. (3) There is evidence, especially in rural areas, that medical care is not adequate and the medical profession must solve this problem locally and nationally. (4) Post-war planning should be based upon local needs and paid for in so far as it is possible by local funds, private charity, or tax provided under local and state-wide lay and professional supervision. (5) A pre-payment medical plan of some kind is a "must" for definite income groups developed on a state-wide basis. (6) It is imperative that this Society now appoint a post-war planning committee to cooperate with a similar committee appointed by the State Association. It is our duty to the men now in the services to see that favorable conditions be maintained and developed for them to practice in when they return. If we do not do this, they will remain in the services of the government and in many places replace the practice of medicine as we know it today. We must do much thinking: we must do positive planning: we must gain the confidence of capital, labor and the general public so that they will help us develop these things on a community basis.

—From "Extension of the Social Security Program in the Post-War Era," by CARL F. VOHS, M.D., in *Weekly Bulletin, St. Louis Med. Society*, April 30.

Plastic Ear Mold

DAVID A. MCCOY, M.D., has an article in *J.A.M.A.*, April 24, on Prevention of Ear Disability in Industry—A Report on the Use of a Plastic Mold." The trials mentioned in the following summary and conclusions were made among workers of the California Ship-building Corporation: A new type of ear stopper, a plastic ear mold, offers as its advantages: (1) It is relatively indestructible. (2) It is efficient in diminishing intense and high frequency noises, yet permits conversation. (3) It is a sure block for foreign material. (4) It is light, transparent and easily cleaned. The finished product is a die cast reproduction of a plaster model. Each ear being different, a new plaster cast is made for each and every stopper. Thus the exactness of fit is obtained to eliminate sound leaks and to prevent irritating points of pressure. A trial of 30 cases was made by pertinent questions following two weeks' usage. The following conclusions therefore seem justified: (1) The hazard of loud noise can be eliminated by these plastic ear molds (2) Slag burns and foreign bodies involving the ears can be prevented. (3) Elimination of prolonged and repeated exposure to noise is obtained with the resultant eradication of irritative symptoms which should allow greater concentration on the job and increase of production. (4) A solution is thus offered for certain industrial ear problems.

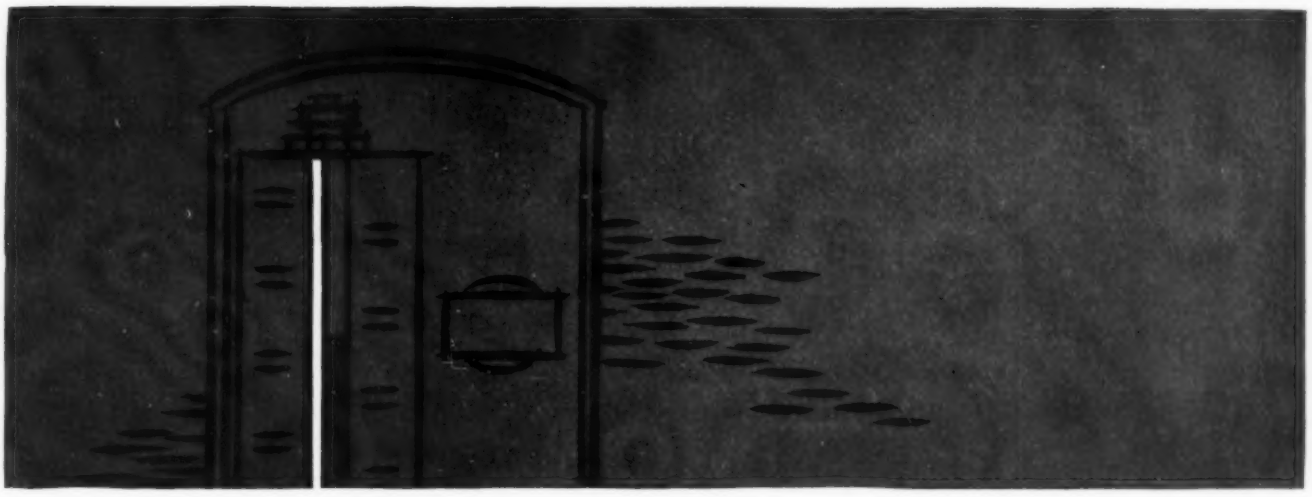
Low Back Pain

DR. HARRY E. MOCK, at the Postgraduate Industrial Medical and Surgical Clinic of the State Medical Society of Wisconsin, last November, presented an excellent study of "Low Back Pain—Anatomic and Constitutional Aspects in the Differential Diagnosis." This was published in *Wisconsin M. J.*, for April, 1943. The following are DR. MOCK'S conclusions:

1. Low back pain, even with sciatica, is not always due to pathologic conditions inherent in the spine itself. There are many anatomic and constitutional factors which may be responsible for the condition.

2. Every case should be thoroughly studied before one jumps to the conclusion that the low back pain is due to an alleged trivial injury, usually overlifting, a maneuver which the patient has performed dozens of times a day for years.

3. The vicious circle of myositis or myofacitis, muscle imbalance, and faulty posture assumed to relieve pain, with the increased muscle imbalance that follows, must be con-



when rest has been *unsuccessful*

The vasodilator action of Erythrol Tetranitrate suggests it as an adjunct to rest and other measures when these have been unsuccessful in controlling arterial hypertension. Producing a vasodilatation which persists for several hours, following the administration of a single, therapeutically effective dose, Erythrol Tetranitrate causes a reduction in blood pressure sufficiently prolonged so that administration three times daily may maintain the reduction. It may be prescribed over a protracted period with sustained effect.

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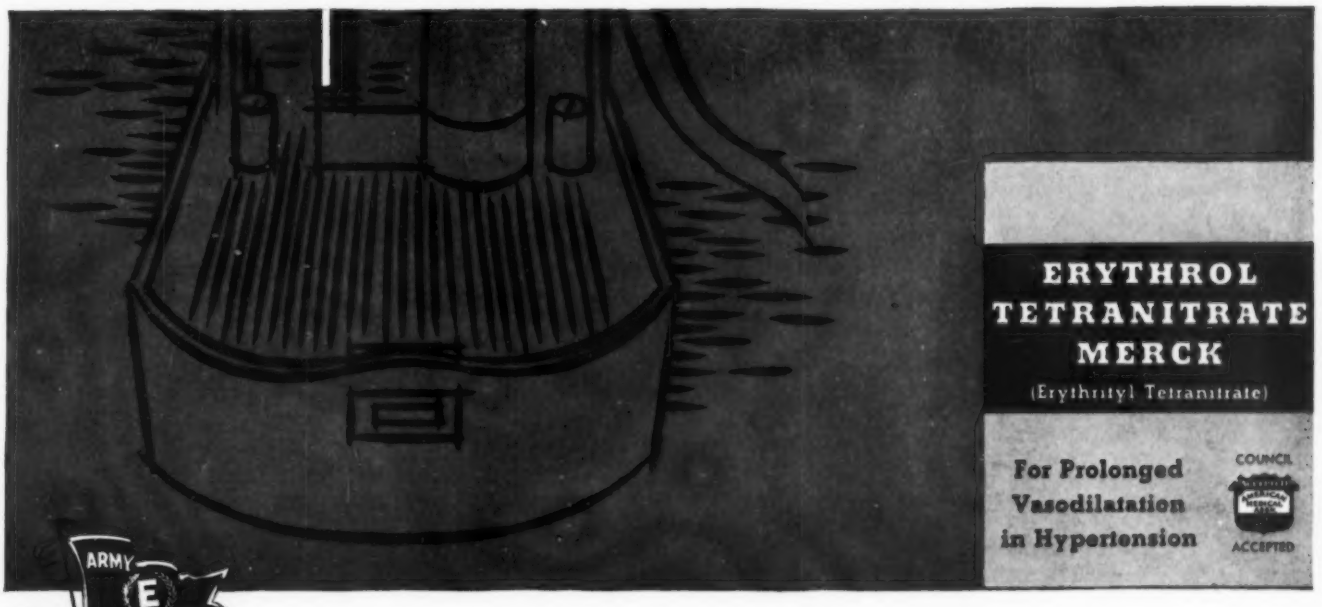

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sidered and corrected in every case before one concludes that the back needs a fusion or a herniated disc operation.

4. The Stiller or asthenic type of individual and other psychogenic types make up a high percentage of the cases with low back pain often accompanied by sciatica. More often, these have recurrent instead of constant backache. Operations of any kind often will help these individuals temporarily, but sooner or later their trouble recurs, or some other hypochondriac lesion develops. These are the patients who respond best to corrective exercises, occupational therapy, and encouragement to correct their mental attitude.

5. There are many organic constitutional diseases which can cause low back pain. These must all be ruled out before localizing and attacking the condition in the low back. It is embarrassing to operate a spine and later find it to be the seat of a metastatic carcinoma. Disease in the genito-urinary tract, the pelvic organs, the gastro-intestinal tract, and the gall-bladder not infrequently manifest themselves by low back pain.

6. Unquestionably, there are spines which must be fused. Unquestionably, there are herniated discs which must be removed. However, before one concludes that the given patient belongs in either category, days and weeks of observation and conservative treatment should be instituted. When treatment fails to relieve, when repeated examinations fail to reveal other causes, when the psychogenic element has been eliminated, and when the signs and symptoms definitely locate the offending pathology in the lower spine, then and only then should operation be performed. The same rules should apply before placing the patient in a plaster body cast for weeks or months or dooming him to wear a cumbersome back brace.

Today, every hour of every employee's time is needed. Any method you have at your disposal to reduce loss of time due to illness or injury is a definite contribution to the emergency effort.

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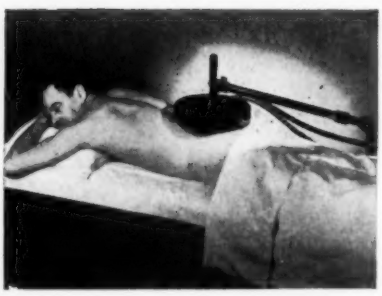

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County Surveys

THE Department of Health has asked Pennsylvania physicians to help a state-wide campaign to reduce time lost in war factories because of employees' illness. DR. JOSEPH SHILEN, chief of the Industrial Hygiene Division, said a highlight of the drive was a survey of medical facilities available in plants producing materials vital to the war effort. Reporting that surveys of factories in seven counties have been completed and studies in nine other counties are nearing a finish, DR. SHILEN asserted services of the state are available to help solve health problems of industries which lack adequate medical and nursing personnel, equipment and supplies. Urging doctors to assist the program, the division chief said plants were being asked to engage full or part-time physicians to supervise health work in individual plants. Surveys have been completed in Luzerne, Lycoming, Lancaster, Dauphin, Chester, Clearfield and Blair counties and are being wound up in Cambria, Indiana, Erie, Allegheny, Philadelphia, Berks, York, Delaware and Lackawanna counties. DR. SHILEN said that of the 88 plants visited by departmental representatives in Lancaster county, only two had full-time physicians while five employed part-time doctors.

—*Indiana (Pa.) Gazette*, April 6.

Pitfalls

INDUSTRIAL medicine and toxicology is a highly specialized branch of medicine in ordinary times, but now in war times it is one of the most rapidly advancing fields in all medicine. The use of synthetics, new halogenated hydrocarbons, plastics, higher alcoholic derivatives, methylated and ethylated derivatives of hydro-carbon alcohols, together with amid and polymerized compounds of some of which the toxicity is not definitely known as yet, give all of the industrial physicians today some headaches. The industrial physician today must know his chemistry, he must be able to put the substance in structural form, break it down into molecular units or its oxidation products and determine its toxicity both internally and externally. The greatest pitfall in diagnosis in occupational disease is the absence of knowledge of the substance or substances in question. Many diagnoses are made erroneously because the true facts are not known, and the person attempting the diagnosis is not familiar with the various sub-

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IS FOILLE ECONOMICAL?

Yes. The saving in hospitalization days, reduction in scarring contractures, complications incident to infection, quantities of dressings and material reduction in use of opiates, all combine to effect substantial savings.

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stances that are used in industry. It is very easy to say a person has diethylene chloride poisoning because they use it in the factory; or a tachycardia is due to a solvent; or the nausea is due to arsenic poisoning, phosphorus or some methylchloride solvent which is used in some process, but the industrial toxicologist will not accept this. He must have scientific proof, such as history, physical examinations, blood tests, urinary tests, skin tests and other laboratory data. . . . In avoiding pitfalls, we must make a differential diagnosis, obtain all data possible and make our diagnosis on facts and not on impressions. One would not diagnose psoriasis as "rubber itch" if we knew there was no such thing. Would you remove an appendix if you knew the individual had lead colic? Would you diagnose a case of carbon-techrachloride as gastric ulcer or gastric nervosa? Would you diagnose a case of lymphatic leukemia as benzol poisoning? You surely would not if you had all the chemical and clinical data, but such diagnoses have been made. These are pitfalls. In our present day rush we are forgetful of the hazards of the industrial worker.

—DR. P. A. DAVIS, in "Pitfalls in Occupational Disease Diagnosis," editorial summary in *Ohio State M. J.*, April.

Ready

WITHIN a few minutes after the fire started (Cocoanut Grove) patients began to arrive at local hospitals. Each hospital received notice from official sources to be on the alert and ready to care for a large number of casualties. The job of getting prepared was made much easier because of a disaster casualty plan these hospitals had previously worked out in cooperation with civilian defense authorities. The medical and surgical staffs and the nurses on duty were called to the emergency ward in each hospital. Regular and special operating rooms were staffed with adequate personnel. In some of the hospitals special teams for the treatment of burns, shock and inhalation injuries had been organized for more efficient handling of these cases. Emergency wards were prepared by evacuating convalescent patients. The casualties were so unexpectedly large that a call for volunteers was sent out to nearby medical schools, nurses off duty, social workers and Red Cross nurses' aides. The response was gratifying.

—From "The Cocoanut Grove Disaster—A Survey of Treatment," prepared for the medical profession by the E. L. Patch Company Medical Advisory Board.

Industrially Injured Patients

NOT infrequently, an industrially-injured patient, after being treated for a time by one physician, is sent, by direction of a compensation insurance carrier, to another physician. From the malpractice angle, this practice creates a potentially dangerous situation. If the end result leaves something to wish for, and the patient is dissatisfied, he may bring suit against both the first and the second physicians who cared for him. Both physicians will be named in the action as codefendants. Every effort is then made by the plaintiff to manipulate the situation so that the two defendants become, in effect, adversaries. If successful, it is of course very satisfactory from the point of view of the plaintiff, but decidedly detrimental to one or both of the defendants. In California and in a number of other states, an industrially-injured patient, although he has accepted a compensation award, may nevertheless have an action for malpractice against the physician who treated the injuries. The insurance company which paid the award will be entitled to reimbursement from any judgment recovered. It is important under a set of circumstances such as those set forth is this case, that the records of all the physicians involved should be detailed and exact, and the principles of malpractice prophylaxis should be especially borne in mind.

—From "Practical Ethics," by LOUIS J. REGAN, M.D., LL.B., in *California & Western Med.*, April, 1943.

Oklahoma

TWO one-day institutes on War-time Industrial Health, sponsored by the Committees on Post-graduate Medical Teaching and Industrial and Traumatic Surgery of the Oklahoma State Medical Association in cooperation with the Oklahoma State Health Department, were held at Tulsa and Oklahoma City March 18 and 19. The programs in each city included talks on the purposes and objectives of the program on industrial health of the Oklahoma State Medical Association,

Food Rationing must not increase Absenteeism in 1943

EVEN when food was plentiful, surveys showed malnutrition to be so widespread that authorities called it an important underlying cause of absenteeism, accidents and lowered production capacity. Today's rationing and shortage of vital foods will make it still harder for the average worker to maintain nutritional needs.

What is the answer?

For many industries today the answer lies in Dietary Supplementation. That is one *sure* way to bring workers' diets up to the high vitamin-mineral levels needed for proper nutrition. Plants and offices that have tried this method report less absenteeism, fewer colds, less fatigue and improved efficiency.

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3. **Potency guaranteed**...Vimms potencies are chemically and biologically controlled. Their stability is insured.

*Journal of the A.M.A., July 18, 1942, pp. 948-9

FOR YOUR WORKERS it is equally important that Vimms are palatable and low in cost. 50¢ for 24 tablets; $1.75 for 96 tablets; $5.00 for 288 tablets.

And—most important of all—even on a wartime diet, 3 Vimms a day will make up the difference between what the average worker gets in his regular meals and the vitamin-mineral levels he *should* attain for top-notch working efficiency.

If you wish clinical samples of Vimms, please write Lever Brothers Co., Pharmaceutical Division, Dept. IM-7, Cambridge, Mass. (Offer good in U.S.A. only.)

Vimms **All the vitamins** *known to be essential*
All the minerals *commonly lacking in the diet*

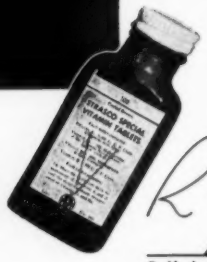
3 Vimms a day supply (In terms of a good food source of each vitamin and mineral)

5,000 USP Units VITAMIN A	1.0 milligram VITAMIN B_1	2 milligrams VITAMIN B_2 (G)	30 milligrams VITAMIN C	500 USP Units VITAMIN D	10 milligrams VITAMIN P-P (Niacin Amide)	375 milligrams CALCIUM	250 milligrams PHOSPHORUS	10 milligrams IRON
as much as 20 pats BUTTER	as much as ¾ lb. cooked LIVER	as much as ⅞ QUART MILK	as much as 5 oz. TOMATO JUICE	as much as 2 tsp. COD LIVER OIL	as much as ½ lb. STEAK	as much as 1½ oz. Amer. CHEESE	as much as 1½ EGGS	as much as 2 cups SPINACH

THE STRASCO SPECIAL VITAMIN PROGRAM IS *Prepared* TO *Help You*:

1. Increase production per worker
2. Save material spoilage
3. Lessen *fatigue* on the job
4. Reduce colds and grippe
5. Cut down absenteeism by *one day per person* participating.

★



SEND FOR FREE BOOKLET
Vitamins In ★ INDUSTRY
GIVES FULL DETAILS OF COMPLETE PROGRAM

R. J. STRASENBURGH Co.
PHARMACEUTICAL CHEMISTS SINCE 1886
ROCHESTER, NEW YORK

technical assistance of the State Health Department available to industry, industrial hygiene in war production, general relation of medicine to industry, pre-employment examination and placement, remedial legislation, conservation of industry's manpower, medical-legal phases and evaluation of disability, management looks at industrial health, and dermatitis in war industries.

Colds

PERHAPS it would be better if industrial physicians would regard the respiratory infections as environmental diseases, such as they do the occupational diseases, always remembering however that human contacts rather than industrial exposures are the primary causes. Having accepted this point of view, they can—and many of them do—offer the workers protective measures as follows:

1. Recommend correction of physical defects which predispose to colds —sinus infections, infected tonsils, subnutrition, etc.

2. For those who are susceptible, obtain work assignments that do not entail exposures to air contaminations, drafts, undue variations in temperature—crowded environments, etc.

3. Encourage the workers who are more apt to have colds to wear appropriate clothing. Perhaps uniform work clothes, such as coveralls, are the best.

4. Conduct industrial hygiene investigations and make recommendations with intent of correcting exposures which predispose to colds.

5. Defer employment, isolate, or give sick leave according to circumstances, when acute respiratory infections with elevation of the temperature are found, until acute symptoms subside and the temperature is returned to normal.

6. Foster the use of the medical department for the temporary alleviation of symptoms as early as possible after they appear. The slightest tickle in the nose or irritation of the throat is an indication for preventive treatment.

7. When symptoms get beyond these early signs, encourage the employment of private physicians; the patient to maintain the contact until cured.

8. On re-examination, or consultation, if the physical defects which predisposed to colds have not been corrected, make further efforts.

9. Keep records on personal incidence of colds with a view to making appropriate suggestion to individuals who have frequent colds, and by department, in the office as well as in the plant, with a view to controlling epidemics.

10. Before and during the season for colds, carrying on educational campaigns.

—From "What Can We Do to Keep Employees at Work," by C. D. SELBY, M.D., Fifth Annual Congress on Industrial Health.

New Problems

WARTIME production has evolved certain new or modified health problems. Some of the more important of these are as follows: (1) There is increased usage of cutting oils, compounds, and chemicals, many of which are capable of causing the industrial dermatoses. (2) Grinding operations have multiplied and these entail exposures to aluminum oxide, silicon carbide, and other grinding materials. While the dusts from grinding operations have not been regarded as harmful to health, disabilities occurring in workers so exposed are coming to be regarded as compensable. (3) Shot-blast operations are being replaced by sand-blasting, and new installations of this nature are consistently using sand. (4) Sulfur and fluoride fluxes in magnesium foundries. (5) In an effort to speed up pickling operations, there is a tendency to increase the concentrations of acids in the pickling tanks, with consequently more contamination of the air with fine droplets of the acids. (6) Solvents are becoming more widely used and certain of the newer ones are purported to be non-toxic. Inasmuch as most of them are in the chlorinated hydrocarbon group of chemicals, they can be assumed to be more or less toxic. (7) Paint spraying operations are being modified, requiring radical readjustments in ventilation procedures. (8) There is a tendency toward longer working hours and consequently longer hours

Help wanted for Women at Work...

Today, more and more women man factories, mills, offices . . . many of them unaccustomed to the strain of industrial jobs. Result: fatigue, too frequent "rests", slowed production, "absenteeism" . . . much of it traceable to poor body mechanics.

In the *relief of certain types* of workers' fatigue, Camp Supports play an increasingly important role. For these supports are *designed along anatomical lines;* they lessen back strain and protect against sprain.

It is a matter of medical record that these supports have—for 30 years—successfully aided men and women to achieve better posture . . . hence to feel more fit . . . do more work with less fatigue.

S. H. CAMP & CO., Jackson, Mich.
World's largest manufacturers of scientific supports. Offices in New York, Chicago, Windsor, Ont., London, Eng.

Rx *A CAMP Anatomical Support as an important aid in the treatment of fatigue due to poor body mechanics.*

CAMP TRADE MARK Supports

ORTHOPEDIC • MATERNITY
HERNIAL • POSTOPERATIVE
OBESITY • VISCEROPTOSIS

Governmental and public health authorities know how necessary are chest x-rays to reveal pathological conditions in advance of clinical symptoms. They know that early diagnosis permits early treatment of the individual . . . as well as essential protection of others who come in close, constant contact with potential infectors.

Result: Every brunch of the military service is now examined by x-ray.

The health of the civilian army of workers in our war plants is just as essential to the success of our war effort.

The POWERS RAPID CHEST X-RAY SERVICE facilitates the making of large group surveys at low cost . . . and without sacrifice of diagnostic quality. Full size radiographs (14" x 17"), at the remarkable speed of 150 per hour, are normal working accomplishments.

One low cost covers the setting up of our mobile equipment in your plant . . . the making of individually identified exposures by our experienced operators . . . the finishing and delivery of diagnostic radiographs for rapid and convenient reading and permanent record. Only 9 minutes of each subject's time are required for the entire procedure.

Request our representative to call when writing for complete literature.

POWERS X-RAY SERVICE
Glen Cove New York

of exposure to harmful materials and shorter periods of recuperation. (9) It is becoming more and more necessary to employ women, older men, and young men who are not eligible for military service, many of whom require selective placement, which is a function of the plant medical service. (10) It is necessary that the medical service in the war industries be integrated with the emergency medical service of civilian defense. Details necessary to this objective are not understood by the industrial physicians as yet. (11) Benzol is being used in increasing amounts as a substitute for toluol. (12) The return of lead paints required in government specification. (13) Priority difficulties in securing ventilation equipment.

—From "What's New in Industrial Hygiene," March.

ILLINOIS MEDICAL JOURNAL for April, under the title "Symposium on Industrial Health," has the texts of the presentations by GOVERNOR DWIGHT H. GREEN, DR. CARL M. PETERSON, DR. WALTER C. ALVAREZ, DR. C. D. SELBY, DR. MILTON H. KRONENBERG and DR. FRED H. ALBEE, together with that by GEORGE P. WARDLY, which made up the "Chicago Conference" (Wednesday afternoon) session and the closing dinner meeting of the Fifth Annual Congress on Industrial Health. The Congress was reported and the above mentioned presentations abstracted in INDUSTRIAL MEDICINE for February, 1943.

MEMBERS of the medical and dental professions going into the armed services and all others who are temporarily not using their x-ray apparatus are urged to dispose of it. The demands for this equipment by the armed forces are heavy and will necessarily increase. Moreover, production is limited by shortages of critical materials, skilled workers, and other factors. It is imperative that every item of x-ray equipment be kept at work. Doctors and dentists who for any reason are not now using their apparatus should sell it, not only as a patriotic duty but also as a matter of self interest. Because of rapid developments that are taking place in the x-ray field, the doctor who stores his equipment when he goes to war may well find that it is obsolescent and of no use to him when he returns to civilian life and private practice. He can far better serve both his country and himself by letting someone else use it now, when it is so greatly needed.

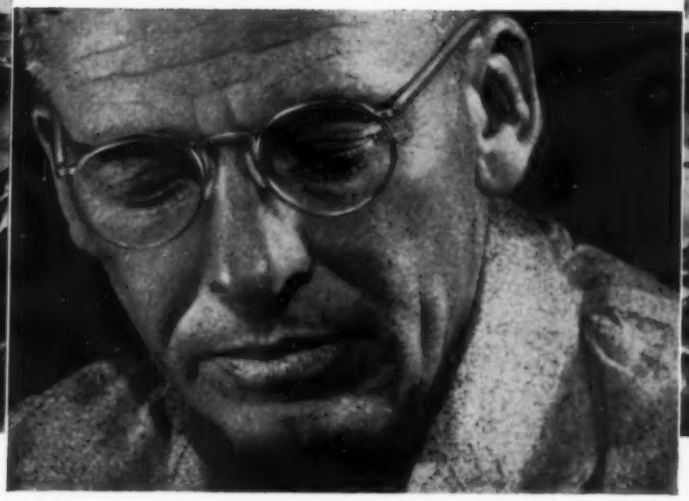
—FRANCIS M. SHIELDS, Director, Safety and Technical Supplies Division, WPB.

Postwar

INDUSTRIAL management is skeptical of postwar planners who expect the world to be spectacularly different after the war. Jobs, manufacturers say, must come as they always have from the sale of goods that the public is willing to buy. Many manufacturers fear that the public has been oversold on the prospects of revolutionary changes in postwar life as a result of plastics, light metals and other new or relatively new materials and new designs. An automobile manufacturer recently said that the first postwar car is bound to be the 1942 car. It cannot be anything else. Similar statements have been made by refrigerator manufacturers and others. Time will be required to perfect new models, and the men, machinery and materials for experimentation, testing and perfecting will not be available until after the war. For the most part new materials come into use as products now on hand are replaced. This is an evolutionary rather than a revolutionary process. Iron and enameled pots and pans, for instance, remained in vogue for a generation after aluminum and stainless steel utensils were available to all who wished to buy. Nylon for full-fashioned hosiery probably came in faster than any other new material ever did, yet when nylon production was turned to war, more than two thirds of all full-fashioned hosiery was still made of materials other than nylon. Plastics, which have been growing by leaps and bounds for a generation, already surround us, and new uses of them are likely to be accepted as commonplace. Synthetic rubber will replace natural rubber and we will scarcely notice the difference. The juggling of atoms to make plastics and other synthetic materials will be of far-reaching importance in postwar America, but the changes will come gradually, rather than overnight.

Keep Vital Supplies Moving Forward ON SCHEDULE

By Protecting Workers' Eyes



"The time has come when we must utilize every hour capable of producing war equipment. Those lost through accidents prolong the war and cause needless sacrifice." — Lt. General Brehon Somervell, Commanding General, Services of Supply.*

You can do *your* part in speeding up production of urgent provisions and equipment for our fighting forces by eliminating eye accidents in your plant.

American Optical Company, pioneer manufacturer of products to aid and protect vision can help you. AO offers you a complete line of easy-to-wear protective goggles—a special design for every type of eye hazard . . . posters . . . guides and charts for correct eye protection . . . the services of an expertly trained and highly experienced AO Safety Representative to work with your own Safety Director.

*From U. S. Army Safety Program Folder, "Conserve Man-Power for War-Power."

American Optical

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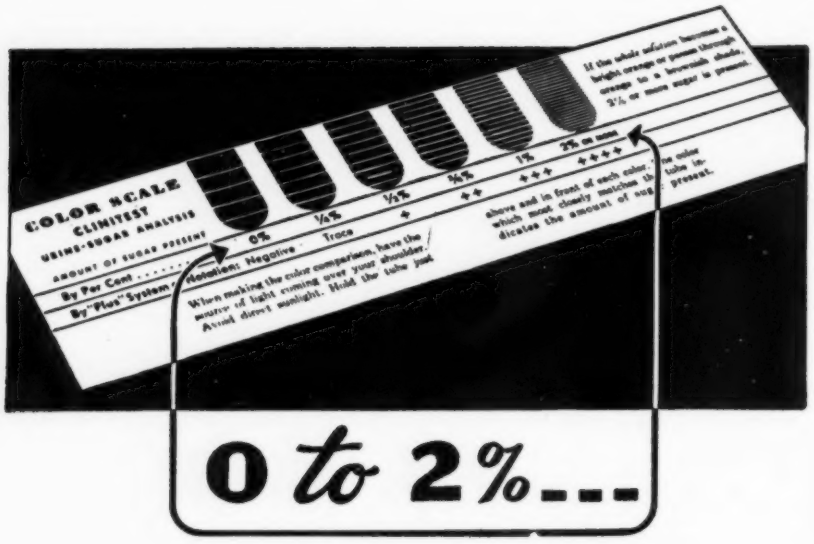
SOUTHBRIDGE, MASSACHUSETTS


COLOR SCALE
CLINITEST
URINE-SUGAR ANALYSIS
AMOUNT OF SUGAR PRESENT
By Per Cent
By "Plus" System
0%
Trace
½%
1%
2% or more
Negative
When making the color comparison, have the source of light coming over your shoulder. Avoid direct sunlight. Hold the tube just above and in front of each color
the color tube which most closely matches the one in the test
indicates the amount of sugar present.

0 to 2%---

DEPENDABLE GLUCOSE DETERMINATIONS MADE IN LESS THAN 1 MINUTE WITH

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Simply do this:

1. *5 drops urine in tube*
2. *Add 10 drops water*
3. *Drop in tablet*
4. *Allow for reaction, then compare with color scale*

The technic is so simple and so dependable you can now test a freshly voided specimen at the bedside of a patient as conveniently as in the laboratory.

Prescribe Clinitest Sets for your diabetic patients and obtain one for use in your practice. Carried by all larger pharmacies and medical supply houses.

Write for full descriptive literature

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ELKHART, INDIANA

The tempo of change will be stepped up, but the change toward plastics or other synthetic and light metals has been going on for many decades.
—National Association of Manufacturers.

WOMEN have proved such a success as inspectors of Army Signal Corps equipment that they now make up 40% of the inspection force, according to the War Department. The women do the entire inspection job, from the mechanical work on the assembly line to the final inspection of the extremely complex electrical equipment.

IT IS TOO BAD that the word "accident" in the minds of many people carries the suggestion that it is more or less unavoidable. As a matter of fact, experience has shown over a period of many years that most accidents are avoidable and in many industries they are being avoided at the present time. The accident experience based on statistics from the refrigeration industry shows that its accident rates are too high and too severe. It is apparent, therefore, that accident prevention work in the industry would yield welcome benefits both to the companies and to the workmen.
—From *Ice & Refrigeration*, April.

SUGGESTED standing orders for industrial nurses have been prepared by the A.M.A. Council on Industrial Health, and are being made available to state and local committees. Industrial nurses may obtain a copy by writing to the Secretary, Council on Industrial Health, American Medical Association, Chicago.

A WORKER in a war plant cut his leg to the bone on the jagged edge of a piece of scrap. The cut became infected, and he was kept away from his war job for several weeks. The production line missed him. This wouldn't have happened if the scrap material in that plant had been assembled in a safe, enclosed place and turned in as scrap metal for conversion to war material.
—NED H. DEARBORN, Executive Vice-President, National Safety Council.

HOSPITALS can now get additional supplies of rationed foods that are needed in patients' diets, by means of an application signed by whatever officer is in charge. Formerly, OPA required the head physician to show the reason for the extra foods and the amount required.

REDUCING absenteeism: Some of the major department stores in defense areas—and some in nearby cities—now have miniature stores in certain defense plants. Women buy from samples, deliveries next day.
—From "News Vane," in *Printers Ink*, April 23, 1943.

NATIONAL Industrial Conference Board estimates that absenteeism resulting from sickness, non-industrial accidents and person reasons alone caused the loss in January of 39,400,000 man days of work. Figures from 47 plants employing 147,251 persons showed for January that men averaged .8 of a work day absent and women 1.2 days absent.

DIRECTORS of schools of nursing rank country girls higher than their city cousins. Some of the qualities the directors like about their non-urban students are: they adapt themselves quickly to life in the school; they have learned to use their hands; they have a good supply of common sense; they are friendly and cooperative; they are conscientious; and, one director said: "They get up in the morning!"
—National Nursing Council for War Service.

REPUBLIC STEEL'S safety program was so effective in 1942 that the frequency of lost time accidents was greatly reduced in 19 of its plants, even though every plant was operating at top speed to turn out arms and munitions to defeat the Axis. Three of the 19 plants had a perfect record and one plant has a no-injury record of over one million man-hours.
—*Liberty Magazine* Release, April 17.

A GOOD deal of interest is being shown today by management in using colors as aids in production and safety problems. The trend is to eliminate the dark grey paint on machinery and apply light colors, particularly at the working area of machines. Information released by the Philadelphia Electric Company and the E. I. du Pont Company on the results of research on three-dimensional seeing reveals interesting data. It was found that a light buff color applied to the working area and a horizon grey to the body of the machine, when ferrous metals were processed, made the visual task

The quick analgesic and sedative action of Anacin has won the approval of many industrial physicians who routinely instruct their nurses to dispense 2 Anacin tablets in the handy individual envelopes.

Convince yourself of the efficiency of Anacin.

Send for a FREE box of 20 dispensing envelopes, each containing 2 Anacin tablets or you can purchase Anacin packaged in these envelopes at the special price to industrial physicians of $2.83 net per box of 250 envelopes. Mail the coupon below.

THE ANACIN COMPANY · JERSEY CITY, NEW JERSEY

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☐ Please send me a FREE box of 20 dispensing envelopes each containing 2 Anacin Tablets.

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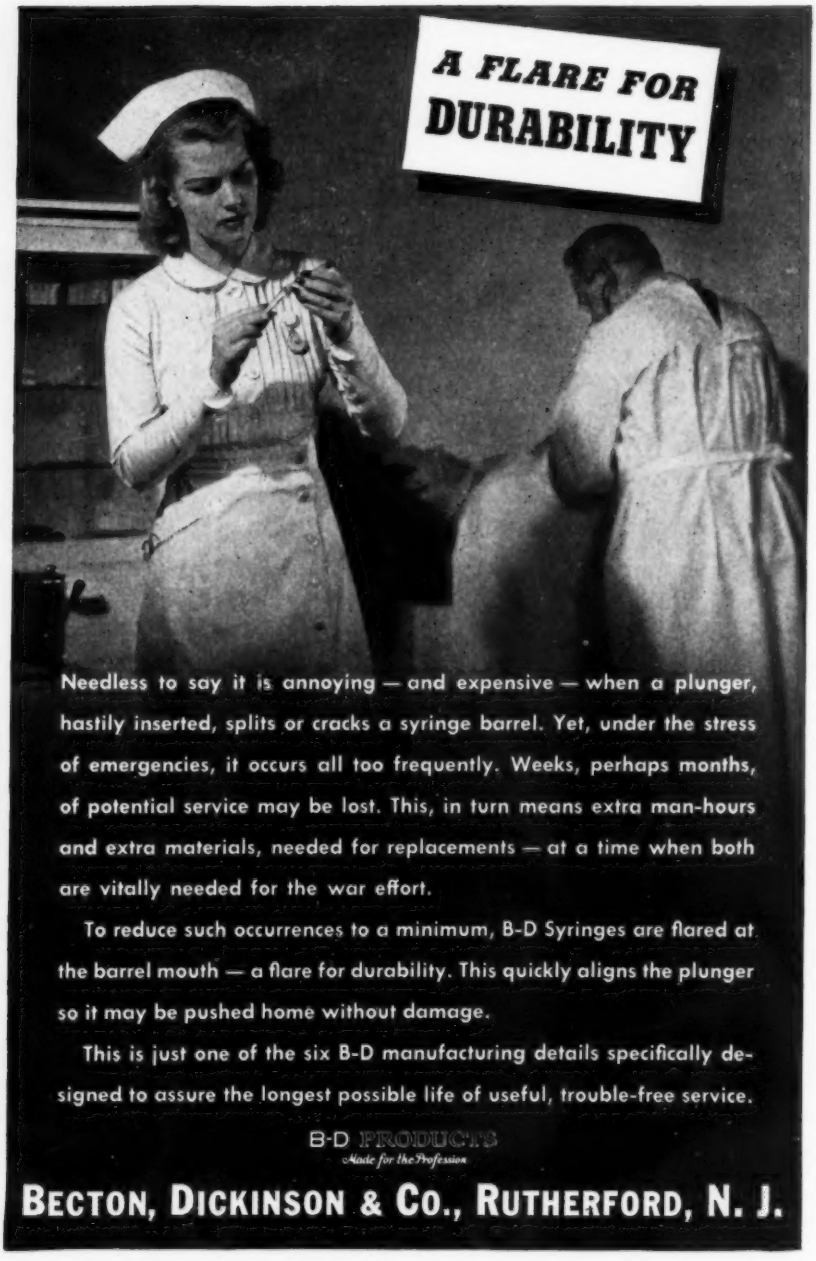

A FLARE FOR
DURABILITY
Needless to say it is annoying — and expensive — when a plunger, hastily inserted, splits or cracks a syringe barrel. Yet, under the stress of emergencies, it occurs all too frequently. Weeks, perhaps months, of potential service may be lost. This, in turn means extra man-hours and extra materials, needed for replacements — at a time when both are vitally needed for the war effort.
To reduce such occurrences to a minimum, B-D Syringes are flared at the barrel mouth — a flare for durability. This quickly aligns the plunger so it may be pushed home without damage.
This is just one of the six B-D manufacturing details specifically designed to assure the longest possible life of useful, trouble-free service.
B-D PRODUCTS
Made for the Profession
BECTON, DICKINSON & CO., RUTHERFORD, N. J.

easier, reduced errors, aided inspection and increased production. When non-ferrous metals were employed, the working area was painted a light blue for equal results.

—From "Industrial Illumination," in "What's New in Industrial Hygiene," March.

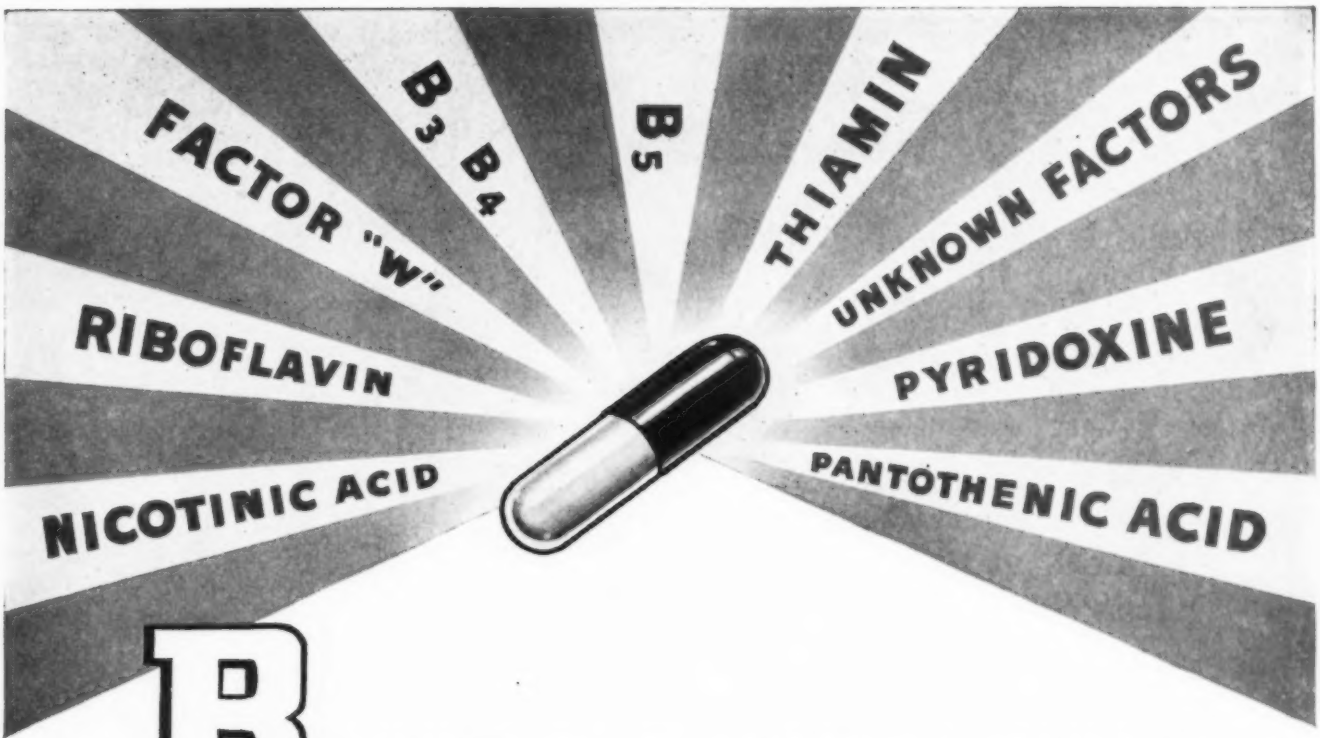
BUREAU OF MINES chemists have assembled information on a method of detecting the toxic oxides of nitrogen that imperil the health of persons working in contaminated atmospheres of industrial plants in which these gases are produced. The detection technique, known as the phenoldisulfonic acid method, first was used in the determination of nitrate in water analysis. It also is applicable to the determination of oxides of nitrogen in air and in other gaseous mixtures. These oxides of nitrogen "occur in the gases evolved in the use of explosives, in the gaseous products of welding operations, in the exhaust of internal-combustion engines, in the vicinity of electrical discharges, in the combustion of nitrated materials, and in chemical processes involving nitration or the use of nitric acid." The report reviews briefly the work of others in the field and offers additional information gained in the study. The accuracy, precision, and sensitivity of the method are discussed, and comments are made on methods of sampling, precautions to be observed in the preparation and use of evacuated sample bottles, the effects of impurities in reagents, the duration of persistence of the hydrogen peroxide oxidizing agent in sample bottles, and the use of photoelectric colorimetry in connection with the method. A copy of the report may be obtained from the Bureau of Mines, Department of the Interior, Washington, D. C. Ask for Report of Investigations 3687, "Determination of the Oxides of Nitrogen by the Phenoldisulfonic Acid Method," by ROBERT L. BEATTY, assistant chemist, and L. B. BERGER, chemist, both of the Bureau's central experiment station at Pittsburgh, and H. H. SCHRENK, chief chemist of the Bureau's health division.

THE influence of competent industrial physicians and surgeons heading up the medical departments of many industries has been distinctly noticed in the job placement of handicapped workers during the last decade. DR. DANIEL LYNCH, of Boston, by his persistent devotion to such a course has rehabilitated many workers who were slated for early retirement because of disabling conditions. Patients with crippled hands are re-educated to do certain types of clerical and office work. Many telephone operators, threatened with retirement because of decreased hearing, are rehabilitated and kept at work by a combination of amplification of the telephone receiver with a hearing aid device.

—From "Industrial Rehabilitation of Permanently Injured Workers," by EDWARD C. HOLMBLAD, M.D., in *Public Health Nursing* (also *Arch. Phys. Therapy*), April, 1943.

VOLUNTEER Nurses' Aides trained under the joint program of the Office of Civilian Defense and the American Red Cross may now be used in Army hospitals, according to announcements from the two agencies. The Surgeon-General of the Army has requested this service, and the sponsoring agencies have recommended that Nurses' Aides be assigned to Army general or station hospitals on request of the commanding officer of the hospital. The aides must receive their training in civilian hospitals as heretofore, however, and service in Army hospitals must not interfere with supplying aides to civilian hospitals and health agencies both now and in the event of enemy action, according to Medical Circular No. 28, issued by DR. GEORGE BAEHR, Chief Medical Officer, Office of Civilian Defense. This proposed extension of the services of nurses' aides emphasizes the need for increased effort in recruitment in localities which have not yet participated in the program, the circular pointed out.

SECRETARY of Labor FRANCES PERKINS reports the results of a survey on ways to control absenteeism, made by the U. S. Department of Labor in leading war production plants. Illness, accidents, transportation difficulties, poor housing, bad nutrition, lack of child care facilities and other problems which the individual worker alone cannot solve are responsible for most absenteeism; wilful absenteeism is almost negligible. Plants have less of an absentee problem when they preplan work as far as possible and require prompt reporting of unforeseen absence. Some firms have nurses or others visit absentees to offer help. Some have sent letters or telegrams or have telephoned. They have had returning absentees interviewed to determine the real cause,



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There is a natural relationship between the individual factors found in Whole Natural Vitamin B Complex, both as to source and as to function in the body.

From the voluminous available data, it is evident that because of this synergistic action, Whole Natural Vitamin B Complex is superior to mixtures of synthetic factors.

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WHOLE NATURAL VITAMIN B COMPLEX

is concentrated to high potency from natural sources—no synthetic factors are added. Only in the Whole Natural Vitamin B Complex can all 16 vitamin B factors be obtained.

Supplied in bottles of 30 and 100 capsules.

BEZON *is made only in the distinctive two-color gelatin capsule.*

Samples and literature available on request.

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NUTRITION RESEARCH LABORATORIES
CHICAGO

PEDICULOSIS

must be relieved *Quickly* among

WAR WORKERS

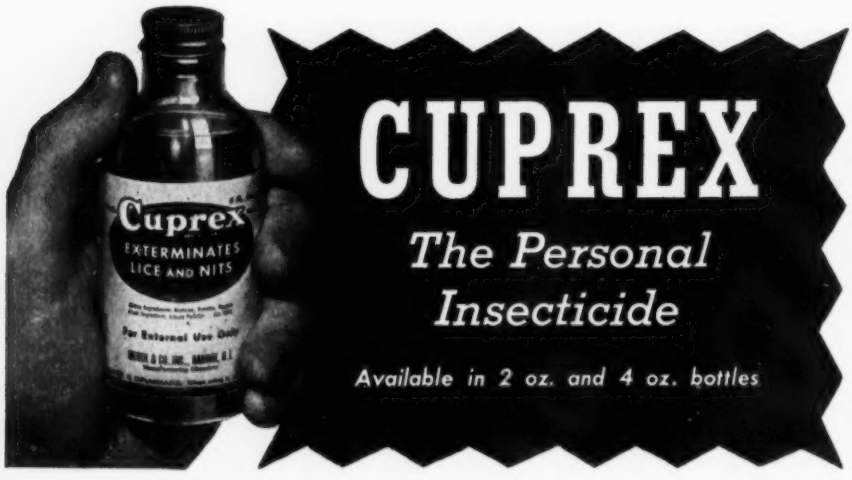
Early discovery, and immediate and effective control, are important in the treatment of Pediculosis among war production workers. Unless proper steps are taken, a single case of Pediculosis may lead to infestation of other employees.

Cuprex is a valuable aid to the industrial physician who bears the responsibility of having to discover and check any condition which may impair the efficiency of the workers under his care.

Cuprex therapy is simple. One treatment—of from 15 to 30 minutes—destroys the nits as well as the lice. Cuprex requires no messy or repeated applications, and the patient may return to his job without delay, and without embarrassment.

Literature on request

MERCK & CO., Inc. *Manufacturing Chemists* RAHWAY, N.J.



help remove it and impress upon the absentee that his absence was noticed and that his attendance is essential. Shop stewards, labor-management committees and labor officials have cooperated. Poor production planning and material shortages are a serious cause. Towards securing a smooth flow of production, plants have worked with suppliers and subcontractors, transportation companies and their own departments. When layoffs must occur, they have explained to employees why there is no work. They have shifted workers with several skills to avoid overstaffing of crews and to secure maximum use of labor. Other problems considered in reducing absenteeism include hours, industrial accidents and disease, industrial fatigue, nutrition, lack of awareness of the relation of the job to the war effort, and personal work patterns. To solve these, plants have re-examined the daily and weekly hours of employees to assure schedules which will maintain output over a long war period; have developed strong safety and health programs and improved working conditions to reduce fatigue; and have allowed workers at least 30 minutes for lunch and recognized the importance of a clean place in which to eat, with a place to wash up first. Some have installed plant cafeterias or lunch carts carrying nutritious foods. They have encouraged recreation and given vacations, emphasizing through various means the importance of the worker's job to the war effort. Counselling or welfare services have helped adjustment to factory work for new employees. Plants have arranged with stores and banks to remain open during leisure hours of workers on various shifts, and to hold back some food to be available when workers begin to shop. They have also installed part-time barber or beauty shops, arranged for check-cashing privileges, and made arrangements with rationing boards to assist workers in securing ration books with the least possible loss of time.

INDUSTRIAL absenteeism is a usual concomitant of industry. It has causes and it has correctives. There is no single cause or cure. Before anything can be accomplished in regard to its control, the why and wherefore of the problem must be known. This implies, first, that adequate and accurate records must be kept if a program for alleviating and correcting the problem is to be instituted. We should know in what departments and from what causes the greatest absenteeism rates occur, so that the core of the problem may be struck at first. The problem of "repeaters" is most important in correcting absenteeism. These individuals cannot be found without the use of records. For example, a study of absenteeism in Wisconsin revealed that 9% of the workers were responsible for 43% of all lost time.

—ROLAND R. CROSS, M.D., Director, Illinois Department of Public Health, in "What's New in Industrial Hygiene," March.

EVIDENTLY, then, there is only a small percentage of men in the nation who have the type of keen brain that can grasp the big problems of modern science and industry. This paucity of good brains in the community is bad enough; what is worse is the fact that even these good brains often are unable to stand for long the strain of constant and heavy use. Like the brains of savages, they need more rest and peace than they get in modern industry. The average man today, if he were to think of it, would assume that in the scale of evolution, he is far removed from his brutal forebears in the ancient world, but really he isn't. He is only some hundred generations removed from Moses and Joshua, and when one reads the many letters that have come down to us from that day, one finds that human nature hasn't changed much.

—From "The Medical Care of Executives," by WALTER C. ALVAREZ, M.D., Fifth Annual Congress on Industrial Health.

Free Lunch

THE First National Bank of Chicago has served lunch to the bank employees for over 57 years. Many organizations maintain eating facilities for their people, but at First National the employees are given lunch without cost to them. The 2,100 employees are served in one large

DEAD BACTERIA *Never* MULTIPLY

Azochloramid

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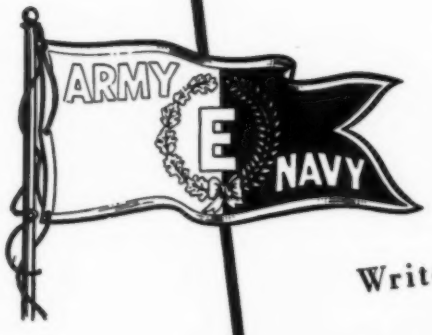
CHLOROAZODIN, U.S.P. XII

FOR
TOPICAL APPLICATION TO
INFECTED WOUNDS

EFFECTIVE
SAFE



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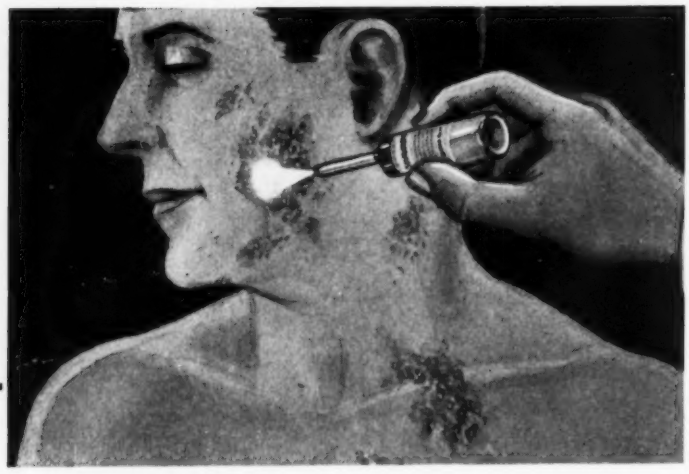

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dining room. There are 42 tables, each seating eight people, with a waitress for each table. The service period covers three and one-half hours. It is interesting that some men have eaten at the same table for over 35 years—and in some instances have been served by the same waitress. The luncheon menu consists of two soups, two entrees, potatoes prepared in two different ways, two fresh vegetables, choice of four desserts, and beverages. If the employee does not care for a complete luncheon, he may choose a salad or a sandwich from the menu. The eating habits of the employees have changed greatly in the past few years; this is due to several factors. A well-balanced meal is planned and printed on the menu as a special luncheon for the day. As an example: beef broth with celery; Welsh rarebit on toasted English muffin; fresh green beans; sliced tomatoes; (employees select dessert and beverage). Milk consumption has increased from 75 to 110 gallons a day. This is due to personal education among the employees and to the large number of young people who have been employed in the past several years. Since the start of the war, the First National Red Cross Chapter has conducted nutrition classes for the employees. The Chapter has helped to make the individual food-conscious as to what foods are best suited to his particular needs. The increased consumption of fresh vegetables, fruit, and whole wheat bread and rolls, is a very good indication that the employee is aware that proper food is essential to good health. One of the important contributing factors in better food selection is the part the waitress plays. Waitresses have been instructed as to what is best and have been very successful in selling their food knowledge. A trained dietitian gives personal guidance to employees about their eating habits. People who should gain or lose weight, people suffering from ulcers of different types, and diabetics are provided with menus to improve their personal welfare. The Bank has learned from experience that providing a free noonday meal for its employees is a good investment. Besides the benefits the employees derive from having a warm noonday meal, there is also a spirit of friendliness and good fellowship that comes from association other than work.

—From "What's New in Industrial Hygiene," March, 1943.

Music

SCIENTIFIC investigation of industrial music began with work on the effects of auditory stimuli on emotion. By controlling music, the auditory work-stimulus, in factories, it was possible to determine to some extent what music is good for and how good it is, although conclusions at this time, because of their limited nature, are indicative rather than final. Data collected in the Burris-Meyer study from various plants under controlled conditions (weather changes, ventilation, noise, labor turnover, labor-management conditions, machinery arrangements and colors, and variations in processes and production being equalized as much as possible) were as follows: (1) Unit output per employee averaged 6.25% higher with music than without it. (2) The total production per 100 man-hours was 11.4% greater with music than without it. (3) In only one week out of the eight observed was production with music less than the production during the test-week before music was installed. (4) Production requiring a very high degree of manual dexterity and timing was found to have increased by 4.07% with the use of music. (5) After music installation, early departures were diminished from 2.52% to 0.845%. (6) Installation of music cut Monday-morning absenteeism from 22.75% to 2.85%. (7) There was a 14.8% increase with planned-program music as compared with an 8% production increase with an ordinary program. (8) Music designed to cut a production dip at 2:15 P.M. reduced the dip 20% and raised as a result the total day's production 6.8%. Programming, it was found in this study, was important, although the best type has not yet been discovered. Generally accepted practices now limit playing time to 2½ or less hours per day, in periods

—Continued on page 335

Frequently that call indicates another case of occupational contact dermatitis and more vital days lost for the production front.

It has long been known that tar ointments were of great value in the treatment of ECZEMA, SEBORRHEIC DERMATITIS, INFANTILE ECZEMA, CONTACT DERMATITIS and PSORIASIS. (1) (2)

Johnstone (3) in his discussion of the treatment of the industrial dermatoses, says, "When a stage of chronicity has been reached and the skin lesions are dry, scaly, and thickened, the use of some tar-containing preparation is indicated."

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1 Das Handbuch der Haut- und Geschlechts-Krankheiten, VI/I, Alexander, Kreibich, Unna, Winkler & Winkler, pp. 244-5, Berlin, 1927.

2 Modern Medical Therapy in General Practice, Vol. III. Chapter on Eczema, by Richard S. Weiss, M. D., pp. 3475-9, Williams & Wilkins, Baltimore, 1940.

3 Occupational Diseases. R.T. Johnstone, M. D., p. 455. W. B. Sanders Company, Philadelphia, 1941.

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Industrial Medicine

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The Journal of Industrial Health, Occupational Diseases and Traumatic Surgery

With which are consolidated "The Industrial Doctor" and "International Journal of Medicine and Surgery."

The Science, the Law and the Economics of Industrial Health

Volume 12 May, 1943 Number 5

GENERAL MOTORS MEDICAL CONFERENCE

Detroit, Michigan **April 9, 1943**

Opening Remarks

H. W. ANDERSON,
Vice-President, General Motors Corporation, Detroit

ON BEHALF of the Corporation, I wish to extend a hearty welcome to each of you who have come to our first medical conference to be held in Detroit.

First, I want to compliment you doctors on the excellent job done last year in spite of the enormous increase in employment, the many new health hazards introduced by the conversion to war work and the shortages of medical help occasioned by the demands of the armed forces.

The examinations of new employees since the war program started have been at the highest rate in our history. It has been necessary to replace over 55,000 employees who have joined the armed forces; altogether we have employed approximately 190,000 new people during the last year.

The new health hazards have been many, but our record will show that you men have been on the alert and have protected the employees from many harmful exposures. As an example, the most common occupational exposure, dermatitis, caused many of you some trouble, but only 92 cases in the entire organization caused lost time. This is an indication of the work you have done to retain effective control. As a matter of fact, there were only 130 cases of lost time due to occupational disease, from all causes, in General Motors last year.

Several of our medical directors are in the army. Some of you here today have lost your assistants to the armed forces. In all, 22 General Motors doctors are in the armed services. To those of you who have joined us in new plants or as replacements for the doctors in the army, I want to say that we are happy to welcome you. We hope you like us. We want you to feel at home in General Motors. I want particularly to welcome the women physicians. There are now five of you in the organization. From all reports, you are doing a splendid job.

You may be interested in knowing more about the General Motors medical organization. It consists of:

111 doctors—65 full-time and 46-part-time.
143 attendants, technicians and laboratory aides.
452 registered female nurses.
78 clerks.

Your responsibilities are great. You are looking after the health of 390,000 war workers and it is expected the number will increase to over 500,000. We are producing approximately 10% of the total war material coming from all plants and shipyards in the United States.

Today there are fewer of you physicians, and yet there is more work to be done. Physical examinations, consultations, medical and surgical attentions have increased as much as 100% in some plants. I believe you have wisely spread your coverage through the employment of competent nurses and technical aides. The number of nurses has more than doubled. This has been necessary to cover the ground.

A word about periodic examinations. I know that the pressure of work has made it necessary for some of you temporarily to abandon the schedules for periodic examinations and also curtail your helpful consultations with employees. As the employment begins to level off and examinations of new employees diminish, I hope you can find a way to resume this important work.

As you know, we are now employing thousands of new people who are not up to peacetime employment physical standards. Unfortunately, this also adds to the load on the medical department. These people require selective placement and closer physical supervision than usual. As the new employment load gets lighter, I hope that you will be able to also resume full attention to the services which are designed to hold sickness and the resulting lost time to a minimum.

The doctor of a plant is charged with duties similar to those of a health officer. He is responsible for the discovery of actual and potential hazards to health and the notification of management regarding suitable corrective measures that may be applied. In this respect your record is good, as indicated by the relatively few occupational disease claims that occur. Even so, it is hoped that attention to conditions in the plants will be such that complaints relayed to the official agencies will be few, if any. If any of you are not sure of the nature and extent of exposures which may appear to be unhealthful, have them investigated by the industrial hygiene services supplied by Dr. Selby's staff. Some of you in plants where the manufacturing operations are such that exposures are many and varied, have established your own industrial hygiene laboratory in the plant medical department. I think this is desirable.

Employment of handicapped people has been mentioned. Their employment introduces special placement and health maintenance problems. They require more complete pre-placement examinations than are ordinarily given. Their selective placement requires a study of the job as well as of the applicant. Suitable instruction is necessary, in order that *they* may do the job despite their handicaps. They must have a close follow-up until they become seasoned on the job. All of this of course takes time and care and patience. Nevertheless, *this* is an important job for the medical departments, and it is a way of preparing for the reabsorption of the employees returning from military service during and after the war. I feel sure that you will take advantage of this opportunity to perfect the technique of safely placing the physically handicapped to such an extent that the return of injured soldiers back into the plants will be handled in a smooth and effective manner. More of this type of employment will be necessary than was done after World War I.

There has been a great deal of publicity about vitamins. The introduction of rationing has added confusion to the picture. I think industry's position in the matter should be simply this: it is essential that workers in the war industries maintain an effective nutritional status and there appears to be nobody else in industry better qualified than the physicians to give due consideration to the nutritional problems of the employees and, if necessary, seek the services of trained nutritionists for guidance of employees who have nutrition problems.

Recently, Mr. Stockbridge, Managing Director of the AC Sphinx Company, a General Motors plant operating in England, visited us. Even though there are some food shortages over there, provision has been made to make sure the employees working in plants have made available to them food of the highest nutritional value. This is particularly necessary, as they work very long hours. The day shift works 55 hours per week for both men and women. The night shifts work 48 hours. Mr. Stockbridge stated better food is served at the Plant Canteen than is available at the Savoy Hotel in London.

You doctors and *your nurses* in the plants are close to the employees. Your friendly professional relations with them result, many times, in the outpouring of confidences from those who are troubled, and there is no one in the industrial organization better fitted to listen sympathetically, patiently, and helpfully. This is recognized as a service of much value, and it is suggested that it be cultivated in so far as may be reasonably possible. With the increased employment of women, nurses particularly will find increasing demands of this nature upon their time, and it is possible that certain of them will gradually take on councilor functions to the exclusion of their nursing duties. This is a logical and desirable development in the medical department.

In outlining some of the problems that have come out of the change-over to war production from the viewpoint of a layman, I hope I haven't left any impression that you should re-design your medical policies or procedures. After all, you are men and women of specialized training and experience and you have acquired judgment. To a degree larger than any of our other activities you make your own policies and specify your own procedures.

As a matter of fact, you are quite unique in this respect. You go along from week to week without hearing much from management. I can imagine that some of you sometimes wonder whether management is really interested in your problems and your work. If you will reflect a moment, you will realize that management is usually devoting its attention to the things that are not getting along so well. The fact that you don't hear much from management is a pretty good indication that you are doing a good job and everybody is reasonably satisfied with the results.

I can assure you that the management of General Motors is aware of the splendid work you are doing and is appreciative of the results you are accomplishing. We are depending on you—yes, relying on you—to keep the men and women of General Motors healthy and on the job so they can produce the weapons of battle that will win this war.

Examining Women in Industry

—Some Observations of a Woman Physician—

DOROTHY F. FRAME, M.D.,
Eastern Aircraft Division,
Bloomfield, New Jersey

WHEN I was riding ambulance about nine years ago I became quite accustomed to having the patient's family rush up to the ambulance driver and greet him with "Doctor, doctor, this way doctor," and then to me, "This way, nurse." Nowadays though, people seem more used to the idea of women doctors—perhaps owing to their recent popularity in movies and radio serials. At any rate during my past year in industrial medicine, I seem to have passed quite readily as a doctor. Or maybe it is merely that I am older and have acquired some gray hairs.

I believe that I have the honor of being the first woman physician to join your organization, and it makes me feel very proud. With this war emergency probably many more medical women will be brought into industry, both to help ease the burden of overworked men physicians and because as women we have a few advantages in examining and dealing with women. And women are entering industry in enormous numbers. In some plants they are even in the majority. Whereas formerly they were employed only in office jobs and small assembly work, now they are entering most of the fields formerly occupied by men, with the possible exception of heavy work and work requiring a high degree of skill and training. Even in heavy jobs, women with the proper physique are beginning to displace men and, if this war is a long one and many more men are taken, they will probably also enter the highly skilled fields. Therefore their particular problems become of increasing importance to

Morning Session, Friday, April 9

CHAIRMAN, DR. A. L. BROOKS

Opening Remarks—H. W. ANDERSON, Vice-President, General Motors Corporation.

"A Practical Nutrition Program for Industry"—W. A. SAWYER, M.D., Medical Director, Eastman Kodak, Rochester, New York.

"Experiences With Armor Plate Welding"—E. A. IRWIN, M.D., Cadillac Motor Car Division, Detroit, L. B. CASE, Industrial Hygiene Laboratory, and VINCENT J. CASTROP, Industrial Hygiene Laboratory.

"Some Observations of a Woman Physician in Examining Women in Industry"—DOROTHY F. FRAME, M.D., Eastern Aircraft Division, Bloomfield, New Jersey.

Panel Discussion—C. D. SELBY, M.D., Medical Consultant, General Motors Corporation.

LUNCHEON—Chairman A. W. HUDSON, M.D. "Experiences in the Southwest Pacific"—JAMES LASLEY, M.D., Cadillac Motor Car Division, Detroit.

Afternoon Session

CHAIRMAN: EARL F. LUTZ

"The Doctor and Public Relations"—DON HOGATE, General Motors Public Relations Department.

"Processing Methods in the Treatment of Industrial Patients"—E. B. LAMB, M.D., Medical Director, Allison Division, Indianapolis.

"The Value of a Laboratory Technician in Industrial Medical Practice"—F. V. KOWALS, M.D., Medical Director, Chevrolet Grey Iron, Chevrolet Transmission Division, Saginaw.

"Control of the Lead Hazard in the Manufacture of Storage Batteries"—A. WAYNE ELSTEN, M.D., Delco Remy Division, and GRANT WINN, PH.D.

Highlights of both days' sessions and Panel Discussion—REEVE M. BROWN, M.D., Chevrolet Motor & Axle, North Tonawanda, New York.

the industrial physician. It is our job to select women with the proper physical abilities for their jobs, and to keep them healthy with as little time lost due to accidents and illnesses as possible.

In examining women for industrial positions, we must realize that they are usually more apprehensive than men. Frequently they have never worked outside the home before, or they may come from a job that did not require a physical examination. Some girls have never even had a complete examination, and their sole contact with a doctor has been limited to seeing him when they had contagious diseases in childhood. Unfortunately, too, the doctor is still used as a bogeyman by some ignorant mothers, and the fear of doctors persists in some adults. Even with the average normal woman where this does not apply, there is still a certain amount of apprehension over being interviewed and examined for a new job. It is different from going to a doctor's office of her own accord, for there she knows the physician and has faith in him; he has probably taken care of her on other occasions and is a friend as well as a doctor. Even if he should be new to her, he is still the physician of her choice who has been recommended to her by friends or relatives. It is she who does the choosing and not the company. Then, too, when she goes to a doctor, it is usually because she feels there is something the matter with her, and she is willing to go through examinations and tests in order to get rid of her difficulty. In the industrial plant, however, neither of these factors applies, and most women feel apprehensive. In some the blood pressure rises, in many the pulse goes up, and it is hard to tell whether it is due merely to nervousness or whether there is something organically wrong. They are usually less nervous when they know they will be examined by a woman physician. A woman doctor, too, can do a more thorough examination, particularly in regard to hernia, without embarrassment on the part of the woman employee. I have had many women who were apprehensive but none who seemed embarrassed, and the usual comment has been, "Is that all? I thought it would be worse than that," or "My, that was a thorough examination! If I pass that I must be in pretty good shape."

As industrial physicians we want to give employees as thorough an examination as possible, both for their own sake and that of the company, but still have it pleasant and free of embarrassment. After all, the personnel office and the hospital form the new employee's first impression of the plant, and whether it is pleasant or not depends to a large extent on us. If we want the employee to cooperate with us later, we want her first impression to be a good one. We want her to realize that the examination is for her benefit as much as the company's. But above all we want her to feel that we recognize her as an individual with her own special problems, and not merely another cog in the wheel of industry. Plants are getting so large, now, and jobs so mechanical, that people more than ever need some place where they will be treated as individual human beings. And the hospital should be such a place.

WOMEN bring certain problems to industry and these problems medically, are mainly due to their difference in physiology—to the fact that they bear children and men don't. Thus we have menstruation, menopause, pregnancy and the care of young children.

In many women, menstruation does not present a problem. Though they may not feel quite up to par at this time and their efficiency may be slightly impaired, they are able to carry on with their normal work. The problem occurs with women who have severe dysmenorrhea, necessitating loss of time of a few hours to one or two days. It is often difficult to know how much time off they should be allowed. Occasionally, girls take advantage of this for absenteeism. We had an instance of this not long ago at another war plant, when four girls from one department came into the hospital at 10- or 15-minute intervals all complaining of severe cramps and wanting to go home. We learned in roundabout fashion that they had made plans together for the afternoon and wanted to use this excuse to get off early. But these cases are in the minority, and, if a woman is having considerable pain we do not want to insist that she work in spite of it. In order to be fair about it, it is helpful to inquire carefully about dysmenorrhea at the time of the pre-employment examination. If women are asked then to estimate whether they will lose time from work during their menses and if so how much, whether a few hours, a half a day, a whole day or more, then one has a guide to go by when the problem comes up. Before they are employed they will usually underestimate their disability for fear of not being hired, later they may overestimate it, but between the two one can usually strike a fair medium. Most women can get along with an analgesic and an hour or two of rest lying down, but some need a whole day at home in bed, and I feel that they are entitled to it if they tell us about it at the time of employment.

In connection with this there is the problem of metrorrhagia and other pelvic disorders. A girl may be taking several days off a month and not like to explain the situation to a male boss. She may even dislike discussing it with a strange male physician and decide that it is none of his business. With a woman physician she is more apt to talk and explain her difficulty. We may not be able to help her, but at least we can let her boss know whether her loss of time is justified or not.

Menopause seems to be less of a problem at present, since most industries hire mainly younger women. Even if more older women are employed, this condition should not cause much loss of time if the woman is conscientious about getting treatment from her physician.

Pregnancy, however, is a bigger problem. Industry, naturally, does not want to hire a woman who is already pregnant, because the value of the time and training spent in teaching her her job would not be returned in work. It is the job of the pre-employment examination to screen them out as far as possible, though without pelvic examinations this cannot always be done. The greatest help in this, I think, lies in temporarily rejecting any woman who has not had a normal menstrual period in the last month. She may return and be accepted as soon as she has her period or if she brings a note from her own physician stating the cause of her amenorrhea. Women do not seem to object to this if it is explained that it is merely a rule of the company like any other rule, and nothing is said about the reasons, particularly in the case of single women or women separated from their husbands. Sometimes, of course, women continue to flow slightly at the time of their periods even when they are pregnant. A careful abdominal examination with the patient lying down and relaxed will rule out the cases where the uterus is large enough to be palpated, but the others will probably be missed. I had a prospective employee not long ago with a mass in her abdomen the size of a grapefruit. She had been married for several years and never been pregnant, and since she said her periods were occurring regularly I thought she might have a fibroid or possibly an ovarian cyst. I advised her to consult her own physician and have a

pelvic examination, which she did. The next day she telephoned us joyfully to say that she was pregnant and to congratulate us on being the first to discover it. Unfortunately, pregnancy is not always such happy news.

There is still the problem of the woman who becomes pregnant after she is employed. At Eastern Aircraft in Bloomfield the policy is not to let a woman work after she is pregnant. At another plant where I work, however, pregnant women are allowed to work up to five months if they wish to, or to take a maternity leave at any time after they become pregnant. Some women, of course, do not feel well enough to work during pregnancy, or may have too many household cares to make it advisable. Others should not be allowed to work if their jobs involve heavy lifting or exposure to certain hazards. However, a large majority of women feel perfectly well and are anxious to work. This is particularly true of young women whose husbands are in the army and cannot fully support them. With the present labor shortage I should think that it would be to industry's advantage to employ them if possible. Housewives continue to do their work at home when they are pregnant, and when it involves taking care of two or three children and doing cooking, cleaning and laundry, it is considerably heavier work than the average woman's industrial job. And if a woman feels well and has no extra home responsibilities, I think that it is better for her to work than to sit home brooding about her new symptoms. But some plants still seem a little afraid to employ them.

The biggest problem of women in industry, though, is the care of the children of the women workers. Perhaps this is not strictly a medical problem, but it does definitely affect their health, and when one is examining women and asks how many children they have and how old they are, then the problem appears.

The average housewife with husband but no children carries three or four hours work in addition to her industrial job. The average man, on the other hand, has few duties at home besides caring for the furnace and doing a few repair jobs. When he comes home after a full day's work he can get into his slippers, relax and read the paper. A housewife, however, after her day's work, still has to do the marketing, cleaning, laundry, cooking and dishwashing. With the present rationing of foods it takes considerably longer to plan and prepare meals than in the pre-war era. Easily cooked cuts of meat, and canned or frozen vegetables which require no preparation, are scarce and obtainable only with precious ration coupons. Therefore the work at home is increased.

With children in the family this work is multiplied, and amounts to at least eight hours in addition to her hours at the plant. Unless a mother or other relative is living with the employee and is willing to take complete charge of the household, I feel that there is bound to be considerable absenteeism among women with young children. The child may be sick, or may have to be taken to the dentist, or the neighbor who was supposed to take care of him may not have shown up, or the woman may not have had time for her marketing, or Junior may need new shoes, or there may be half a dozen other reasons that make it imperative for the mother-employee to stay home rather than go to work. This is particularly true of mothers with babies and pre-school children. I happen to have two young children myself, one three and one a year and a half, so that I realize their problems perhaps more than does the average doctor. I am able to afford a trained children's nurse which most industrial workers cannot (even if they were available). I used to have a maid, too, but Sadie, together with most domestic workers, is now in an industrial plant herself. So I realize quite personally the problems of running a home with small children and doing another job as well.

Especially difficult is the problem of women with large families—four or more children. I have seen many women in this position who are working one shift while their husbands worked another. For instance, the father would work from 7:00 to 3:30 and the wife from 3:30 to 12:00, with a neighbor looking out for the children for the hour or so between their comings and goings. I suppose that this can be managed in the case of children who are old enough to attend school and more or less look after themselves, but it allows no leeway for emergencies or overtime, and I should think would either leave the children uncared-for or make both the husband and wife too tired to do their jobs at the plant. With several pre-school children, however, I think that this is a very poor arrangement, and I feel that the mother would be doing a far more important job by staying home than by trying to work in an industrial plant.

But war industry needs women, and mothers will have to work if we are going to have enough woman-power to keep production going. And industry wants *young* women, which means that many of these mothers will be those with young children. How then are these young children to be cared for? I think that the best arrangement is where the employee's mother can live with her and care for the children and the home. She will be dependable and personally interested in the welfare of the children. If a child is sick she will meet the emergency and look after him. She will make it possible for an employee to work whatever shift is necessary, and will not leave her over-burdened with household tasks when she comes home. But this arrangement is not always possible. The employee's mother may have other duties and responsibilities, or not be well or strong enough to do it, or she may even be working in a war plant herself. So what then?

Good hired help is out of the question for the average industrial employee on account of the expense, and school-girl help is too unreliable.

Some women will work out the problem by working on different shifts from their husbands, but even if this were a good arrangement it is not always possible. Some live too far from their place of work, so that too much time would be taken up by transportation. Some husbands have to work too much overtime to make it feasible. And many husbands are in the armed forces.

So what is the mother-employee to do? I had a typical instance the other day. A young woman from the South came up to us for a defense job, bringing her year old baby. Her husband was in the army and did not earn enough to support her and her child. She thought that she could easily find a nursery in which to leave the child while she worked. But provision for this in most places is very inadequate. Provision must be made, though, if mothers with young children are to be able to work. Whether the community or state will do this, or whether it will be up to the individual industry, I don't know. But nurseries will have to be provided. Governor Dewey, of New York, has already taken steps in this direction; and several plants have not waited for the community but gone ahead and provided the nurseries themselves. But many more nurseries are needed.

In conclusion, then, women bring to industry the problems of menstruation, menopause, pregnancy, and the care of young children. Industry is rapidly learning how to handle the first three of these problems, but the problem of the care of the children of women workers is still far from solved, and is the cause of considerable absenteeism.

Abstract of Discussion

DR. FRAME: As to heavy lifting by women, this, of course, should involve, wherever possible, the use of mechanical devices. However, there still remain jobs which require manual lifting, and some plants are beginning to use women for them. I mentioned that at one plant where I am also working certain tentative criteria for these jobs have been set up, and it was requested that these be added to this paper. These should not be taken as settled standards, but merely as an example of one plant's attempt to solve this problem. Jobs there are graded according to the weight to be lifted: Group I up to 35 pounds; Group II 35-75 pounds; and Group III over 75 pounds. As far as possible, the applicant should weigh 100 pounds plus the weight she is required to lift. All women, of course, should be in good physical condition and have no evidence of hernia or abdominal weakness. For Group I the applicant must weigh at least 115 pounds and pass the routine physical examination. For Group II she should weigh at least 135 pounds, have no evidence of focal sepsis, no varicosities or flat feet, and no history of gynecological or back trouble. For Group III she should weigh at least 175 pounds with good muscular development rather than fat, pass the above requirements, and have an x-ray of her spine. In addition, I think that it would be wise, if possible, to have pelvic examinations, particularly on women who have had children.

The Doctor and Public Relations

DONALD D. HOGATE,
Department of Public Relations,
General Motors Corporation,
Detroit

IT IS A PLEASURE to be here today and discuss the relationships existing between doctors and public relations men.

Everybody knows the job of a doctor. Few people know the job of a public relations man. There are many definitions of public relations. H. G. Weaver, of General Motors, says it is doing more and more of what people like, and less and less of what they don't like.

I rather like to define our public relations as interpreting General Motors to the public to the end that more and more people will be favorably impressed with our company and our policies.

In peacetime, good public relations dispose more people to the purchase of our products. In wartime, they reflect the large part that General Motors is doing in the war program.

What does the Department of Public Relations do? We are responsible for institutional advertising; stockholder relations; press relations; radio relations; booklets; field relations (GM Clubs); film program (15,000,000 people will see GM films this year); special events (executive dinners, exhibits, special functions); plant activities (promoting victory revues, bond campaign, scrap drive, posters, rallies, etc.); plant city program (nine field offices).

We can't do this alone. We can only do it with the help and cooperation of thousands of GM people everywhere. Mr. Garrett, vice-president of General Motors and director of public relations, believes the job is one of multiplication—that is, getting the help of more and more people within the organization.

Public relations begin at home. At home means first, within ourselves and, second, in the plant communities in which we live. And that is where the plant doctor becomes definitely a public relations man.

I have never ceased to marvel at the way doctors take their place in the communities where they live and do an extra bit of civic, religious, fraternal or political service, despite the tremendous professional demands upon them. I know you doctors in the plants have the same ability and opportunity for employee contacts.

Specifically, what can you do?

No. 1. You and your medical departments are the front door of the plant for new employees. They get their first impression of GM (after the personnel interview) from your department. You may call this employee relations, but when the employee goes downtown to shop, visits with his neighbors, and talks about General Motors, then he is in the field of public relations. If he talks *for* us, we have good public relations in a plant city. If he talks *against* us, then we have bad public relations. So I urge you to get your staff and department on such a basis that employee impressions will always be favorable.

No. 2. You see the employee occasionally from then on. He comes in for advice; he comes in for treatment; he may drop in for a visit. You have a contact with him that is comparable to the country doctor's contact with the public. I think plant managers should inform the doctor on major policies. I think doctors should attend staff meetings regularly when policies are discussed, because your opportunities to do a personnel job are many. And a personnel job eventually means a public relations job. You can't separate them in a plant city.

No. 3. You are a link between General Motors and an important group downtown—the local medical association. Many of you have had these association men through our plants, winding up the visit with a dinner or a luncheon. This is most constructive, especially when your manager is invited in to talk to the visiting doctors, outlining our health and safety record.

Others of you have spoken before civic groups, luncheon clubs, etc. We have called upon Dr. Selby dozens of times to speak before these groups. He has done a good job, but he would welcome some help. I know you are all in possession of facts and figures that would make an interesting and informative story for a great many business men in your home town.

No. 4. In those plants where plant papers exist, the editor would welcome an occasional article from you on some phase of industrial health. If you can't find time to write it, call in the editor and tell him what you have on your mind. He'll write it and submit it to you for check.

Dr. Selby recently told our editors that this was a great need. He asked them for their cooperation. I am asking for yours. A doctor and an editor, teamed up, can contribute a great deal to an employee—information that is valuable and helpful to him and his family.

No. 5. Watch for the opportunity to pick up wrong impressions and misunderstandings and correct them when you hear them in your offices. If you don't know the complete answer, check with your personnel department or your plant manager. You have the opportunity to catch these misunderstandings before groundless rumors start.

And finally, No. 6. Make sure that your entire staff understands management policies and procedure. Getting along with people is perhaps the greatest single characteristic of successful men. Doctors, as a class, have this ability to a marked degree, and you enjoy the confidence of a wide range of people.

We are teamed up in General Motors to do a war production job, about 10% of the total war effort of our government. There are problems ahead. We face cutbacks in certain schedules because of the changing tide of the war. That will be a big question in employee and public relations in the coming months.

In other plants, we will face increasingly heavy schedules, with the problems of absenteeism and efficiency. That is a job on the other end of the scale for

all of us. You can bank on a crop of rumors, regardless of what production curves are in store for your particular plant.

There will be the problem of interpreting—and understanding. Both are two-way streets. It comes up the line in the way of grievances, and it goes down the line in the way of policies.

In the process, you are going to find yourselves in the role of a transmitter. The job is endless. We aren't talkng to a mass meetng. We're talking to a parade. A story once told has to be retold in another way at another time.

After all, public relations and the medical profession have much in common because they are both dealing with human beings and human reactions.

The Industrial Dispensary

—Processing Methods in Treatment—

E. B. LAMB, M.D.,
Medical Director, Allison Division, Indianapolis

THE industrial dispensary, like any hospital, clinic, or doctor's office, must be constructed and maintained to meet the needs for a specific situation. Many variable factors combine to make up that situation. Some of the most important of those factors to be considered are:

I—The Nature of the Industry to be Served

CAREFUL consideration must be given as to the processes of manufacturing, with their accident and occupational disease hazards It has been too truly said that the unexpected always happens in accident cases. In a general way, the medical department should be ready to meet any emergency, to insure the patient that he receives treatment comparable to the accepted standards. However, it seems practical to anticipate and prepare for the needs largely on a basis of past experience and present hazards.

Thus a large foundry should make sure the dispensary is adequately equipped to handle burns of various kinds; a machine shop must be prepared to suture cut fingers and remove foreign bodies from eyes; while a storage battery plant must give more than casual attention to guarding its employees against lead intoxication.

I know of a small foundry where when a mold exploded and filled a man's shoe full of molten iron, not even a bandage or a cloth towel could be found to cover the foot. When the doctor arrived, it was found that some practical-minded employee had wrapped the burned member in a newspaper. This perhaps did not damage for the few minutes it was there, but it at least revealed to the patient and fellow-employees the fact they were not adequately protected for emergencies.

A small machine shop was found to be having a very difficult experience with dermatitis and folliculitis of the hands and arms of its workers. An investigation showed these employees were not provided with hot water and soap. This very common and useful commodity is perhaps not given its just place among shop men as a necessary equipment.

II—The Size of the Industry to be Served

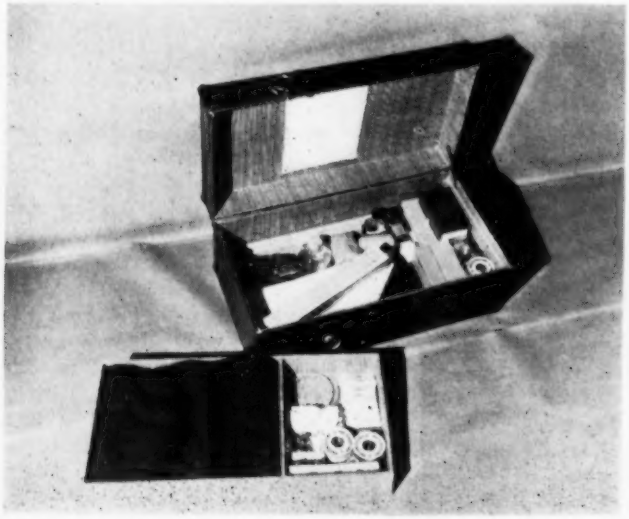
I THINK it is reasonable to assume that in general the amount of work demanded will vary directly as the size of the plant personnel. Although the plant doctor must not lose sight of the physician-patient relationship and the confidential information he receives, he and his assistants must, on the other hand, realize that his is a service department. He is there to meet a personal need, the same as the patrolman at the gate, the fireman in the tower or the matron in the rest room.

I know of no way of determining the hours a doctor must spend in a plant dispensary or the number of physicians needed per unit of personnel. That must be determined by experience and will vary greatly in different organizations.

In regard to the number of nurses needed, one can be a little more definite. It has been my experience that, in the usual dispensary, if a nurse takes time to give careful, courteous attention to the case, practices good housekeeping, and keeps accurate records, she should not be expected to see more than an average 50 to 75 patients in an eight-hour day or, from another point of view, not more than six or eight an hour.

It is true that one patient may be only for a hasty dressing or a minor abrasion or merely to report a condition which may take only a moment. The next, however, may require an examination or treatment which will demand time far in excess of the average or the patient preceding him.

It seems both humane and also practical from a personnel standpoint to try to establish a precedent that employees may come to the dispensary freely. It is true that in certain cases the employee may use this as a means of wasting some time or dodging an undesirable job. We have found such cases to be relatively few, however, and feel the advantages far outweigh



(LEFT)—Emergency supplies are placed in this type of trunk. Supplies consist of a few instruments, simple medication, a blanket, and some splints. These trunks are then placed at the patrol posts. (RIGHT)—Patient has come to the hospital for treatment. She is reporting at the record window. Note the hospital pass she is presenting for record on the log

DAILY TREATMENT AND FIRST AID RECORD

ALLISON DIVISION, GENERAL MOTORS CORPORATION

ATTENDANT: E. Montgomery R.N. APPROVED: DATE: 3-22-43

TIME	MAN NO.	NAME	NATURE OF INJURY	TREATMENT	RETURN TO WORK	LOST TIME	ESTIMATED LOST TIME
8 A.M.	384 427	Faye Baily	Off 4 wks. ā Peptic Ulcer. Has Note from Dr. ok. To work. To have Nourishment	10 a.m. + 2 p.m. Letter to Naval Service.			(No)
8 20 A.M.	F09 271	Harry K. Allen.	Red area, lat. asp of Nail rt. mid. finger.	Raynol dress. Adv. Mfg. Soc.			(No)
8 34 A.M.	727 5202	Irvin Scott	Lac. left ind. finger. dist. Phal. Palmer on tool. Mertle, Bridge. + dress.				(m)
9 A.M.	319 230	Harold T. Blacker	Cavit. rt. ring finger. dist phal - on gear box. X-Ray Shows inc. fracture of dist	Portion of dist. Phal - Bird Cage Applied.			(maj)
9 12 A.M.	317 419	Patrick B. Dugan	Cold. Sore throat. Fever.	Tab. Sulfa gui. + 99 - Adv. to see P. Doctor			(No)
9 15 A.M.	917 1020	Chester G. Grimes	F.B fixed on Cornea rt. eye. About 12 o'clock - Removed by P. Doctor, Boric Wash - Mol. Oint, Patch. Taken home via Safety E				(Maj)
9 24 A.M.	728 0042	Alonzo H. Jones	Poss. Syp. Ulcer. rt Forearm. Med. Asp. head + Opium	Pack (20 min) Raynol dress			(S)
9 32 A.M.	119 035	James S. Turner.	Traumatic Amputation. Rt. mid finger. Int. Phal. Met. Joint. Cleansed well. VI dermal Sutures taken. Mertle + dressing taken home via Ambulance. Cause - (Hack Saw)				(maj.)
9 40 A.M.	491 072	Emmett Kreiner	Consultation Re: Chest X-Ray. - To see P. Doctor.				(No)
10 22 A.M.	528 0302	Jack L. Young	Dermatitis of hands + Arms. Diag. by P. Doctor. Spec. Wash - Wrists 55				(S)
10 20 A.M.	257 006	Robert G. Ceiling	Old lac. left mid. finger. dist. Int. Phal. St. Palmer. Rebridged + Redress.				(R)
11 02 A.M.	431 05-14	Martha H. Adderson	Headache - Upset Stomach. Chilling. Temp. 101 - Phensal Tab II. To bed in 1st Aid till end of Shift. Adv. to see P. Doctor.				(No)

Represents one sheet of the daily log. As each patient reports, he is registered here. His individual record is pulled and a complete record of his call made

the faults of such a system. With complete and accurate records and the pass system, insincere patients usually do not make many purposeless trips to the hospital.

The number of calls to the plant dispensary per unit of personnel will vary greatly as to work precedents established and personalities involved. A new, attractive nurse in the dispensary will probably have some immediate increase in the number of calls because of curiosity on the part of the employees. In machine shops where the service has been established and well stabilized, it has been found that one to one and one-half calls per month may be expected per employee.

III—Location and Distribution of Working Personnel

ONE of the very definite trends recently has been to "take the medical service to the employee." By this means, I mean efforts are made to place the dispensary in such a location as to be available to the employee while he is at work and to staff and equip it to care for the usual case. This is much different from the old idea of just a first aid station at the plant where a dressing could be done by some fellow-worker and then the injured one hauled out to some neighboring clinic or hospital.

The question then arises as to where in a plant to place the hospital. The most practical place is often the least glamorous. When one considers the time employees may spend going to and from the hospital and the total distance they will travel, he will probably be content to place it as near as possible to the center of the population it is to serve. Care should be taken, however, to make sure it is accessible by central aisle-ways as well as provided with an emer-

These represent one type of washer for hands and face. It is the same as those used in this area in the shop

(LEFT)—The patient is receiving a minor dressing from a nurse giving her undivided attention, at which time the patient is encouraged to ask questions or make explanation. (RIGHT)—Eye cases must be handled in an isolated section so that antisepsis may be preserved and lighting may be controlled

gency exit for the proper removal of ambulance cases.

Patrolmen and matrons stationed through the plant and at the gates must be impressed with the importance of working in close cooperation with the medical department. They may have to be somewhat of an inspector to detect a crippled or sick employee. They may have to direct a new employee to the hospital or assist a disabled one to get there. One of the worst situations possible would be a lack of cooperation between these two service departments.

IV—The Resources of the Local Community

IT WILL be readily admitted that no plant medical department can consider itself self-sufficient for all emergencies. In these days we are thinking more than ever of major catastrophes that could come to us either as a result of enemy action from without or sabotage from within. In such an event, the resources of the community might be most necessary. Because of this, a careful invoice of these resources should be made so that they could be efficiently used in the event of such an emergency.

The Office of Civilian Defense has set up in our community the organization which has already done this for us. At the Allison Division we have worked closely with this organization and feel that, if occasion should demand, we would have available within a few minutes a fleet of ambulances fully staffed with doctors and nurses at our plant.

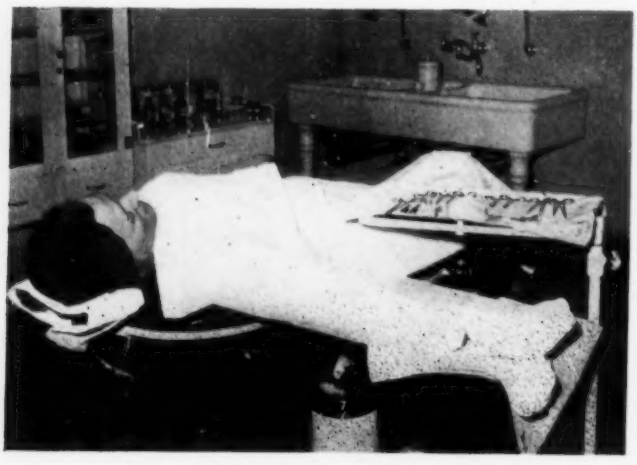
As before stated, we feel it essential to work in very close cooperation with our patrol service. Our stretcher teams are organized and instructed. We have stretchers of the regular army type placed over the plant. These are easily carried by either two, three or four stretcher-bearers, and in an emergency may be used as beds. Recently, owing to a break on a permachlor degreaser, we had occasion to utilize 30 such beds and we found such an arrangement very satisfactory.

Another example of facilities available is that of trunks kept on each patrol post for emergency service. These are the regulation army trunks measuring 30½ x 16½ x 12½ inches. They are regularly inspected and sealed by the hospital nurse who has this responsibility. If a seal is found broken on the post, the trunk is replaced and brought to the hospital for inspection.

In such a trunk is a regulation set of articles thought practical for it. It includes a few instruments, bandage, cotton, some salt solution, simple medication, a blanket, and splints. We have found these to be seldom used, but the fact they are available seems to give us a sense of satisfaction that we are prepared for an emergency.

V—The Floor Plan of The Hospital

AS ABOVE stated, in order to best meet the needs of the hospital, it may often be necessary to place it in a location where it will not be beautifully situated. The controlling factor here must be efficient service. Also, as the plant grows or the population shifts, the problem of putting the hospital or branch dispensary into a certain given space may be presented. Too often the hospital is not given its due consideration in the original plan but is forced to come along as an afterthought.



(LEFT)—Sutures of minor wounds can be efficiently done in this manner. (RIGHT)—The x-ray room

(LEFT)—The patient must be made to feel that the Medical Department is interested in his problems and that he is afforded an opportunity to discuss them with the doctor. (RIGHT)—The men's bedroom with regular hospital beds

Careful consideration of the problem will lead to planning the hospital so that the following principles will be maintained:

1. Employees for treatment will not mingle with applicants for employment.
2. The main entrance must be accessible at all times.
3. The rooms must be arranged with a minimum of hallways so the patient may progress logically in his case from station to station.
4. An ambulance entrance will be provided so that the ambulance case does not pass back through the shop past the scene of his accident or his closely associated fellow-workers.

VI—The Equipment and Its Use

THE equipment of the hospital also must be balanced and that balance will be determined by variable factors similar to those before mentioned, e. g., the nature, size, location of the industry and also the resources of the community. Because of this, there can be no such thing as closely standardized equipment. One must anticipate his needs and plan his equipment and supplies to meet them efficiently.

As above mentioned, it is also advisable, in my opinion, to plan, to some extent at least, to take care of the unusual. It is easy to go to extreme in this direction and stock supplies which will never be used. On the other hand, if nothing is done and if a major catastrophe should come, the medical department and its personnel would be severely criticized for not being prepared. To be more specific, careful consideration should be given as to whether or not, in the opinion of the medical director in the given plant, he should have a stock of blood plasma and retrieving equipment.

For example, we have at Allison Division of General Motors chosen to stock a small quantity of blood plasma. In the year that we have had this supply, only one jar has been used. That occurred when least expected—when a workman fell from a scaffold and suffered a severe chest injury. When brought to the hospital on stretchers, he was in extreme shock and it was undoubtedly good practice to have been able to give him a transfusion within a few minutes time.

A few fundamentals of the hospital that seem essential are:

1. Adequate and complete record system.
2. Personnel always available.
3. Good quality supplies with reserve stocks.
4. Adequate facilities for sterilization of instruments and supplies.
5. Adequate facilities for washing.
6. Facilities for diagnosis and treatment.
7. Recovery rooms.
8. Ambulance service.

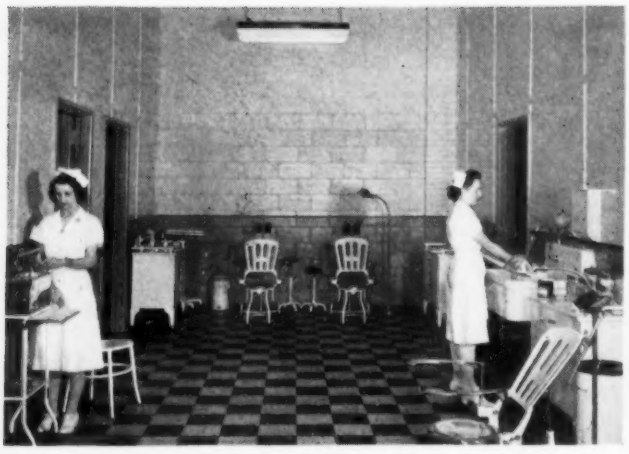
With these facilities established, let us think together of the practices we shall follow in serving the sick or injured in our plants.

The accompanying pictures will illustrate our attempts to render this service.

Conclusion

IN THE operation of a plant medical department it seems reasonable to admit that no system can be used entirely to the complete satisfaction and con-

(LEFT)—Ambulance service, if maintained, must be efficient and adequate to meet the needs in a manner comparable to those recognized as standard in the community. (RIGHT)—An efficient nurses' organization is necessary and at the head of each must be a competent supervisor



(LEFT)—The dressing room for minor injuries with nurses at their stations. (RIGHT)—The surgery where the more serious wounds may be efficiently controlled

venience of all parties at all times. As above stated, the medical department must be built and maintained to meet a specific situation. At the Allison Division of General Motors Corporation we have found the department as here described to be our practical challenge to that need, although we, from time to time, may make still further changes in it as seem indicated.

One of the most important opportunities for service to the employee, employer and to the war effort that the doctor can now render, is to offer to the distressed, disabled or disgruntled employee his sympathetic, patient attention. In this he must be a true physician and advise this patient in all sincerity and honesty. If he can in this way relieve the suffering, correct a misapprehension, and substitute a feeling of cooperation for one of antagonism or animosity, he has in a rather intangible way aided all parties concerned and helped bring the day of victory over the axis closer.

The Clinical Laboratory

—In Industrial Medical Practice—

FRANCIS V. KOWALS, M.D.,
Chevrolet-Grey Iron Foundry,
Saginaw, Michigan

CLINICAL laboratory methods are nothing new in industrial practice. They have been used by industrial medical establishments in sporadic fashion for several years. It is only recently, however, that thought has been given to the practicability of making the clinical laboratory an integral part of the industrial medical department. In this, as in any undertaking, the primary consideration naturally present itself, if expressed in business terms, as gain versus loss. Therefore, the clinical laboratory should be considered from the standpoint of advantages or gains derived and disadvantages or losses suffered. The problem, furthermore, resolves itself into considerations affecting the routine of the medical department; the employer, the employee, and the community.

In considering the addition of a clinical laboratory as part of the industrial medical department it is worthwhile to observe certain general principles and facts gleaned from the actual experiences of others. At the outset it can be said that the clinical laboratory for industrial use need not be an ultra-complete establishment, equipped to run all the tests listed in a thousand-page text book on clinical laboratory methods. The size of the laboratory must be gauged to the size of the industrial establishment which it is intended to serve. The nature of the industry in some cases could wisely be considered as to its inherent health hazards, but as a general rule the clinical laboratory will follow the usual pattern.

It is a natural assumption that the introduction of a clinical laboratory as an integral part of the industrial medical department requires the allotment of more space. To employ a dark nook for which there is no other use is the start of disappointments which eventually lead to discontinuance of the laboratory, resulting in financial loss to the employer and an inventory of useless equipment occupying valuable space in the medical storeroom. It is the opinion of the writer that the allotment of adequate space is one of the important factors to be considered in the establishment of a workable clinical laboratory.

A competent and industrious technician is the hub around which all the functions of the clinical laboratory revolve. She is the energy which operates the laboratory, and makes the difference between success and failure even when other basic factors have been well considered and adequately met. The dynamic equipment, it may be said, is centered in her. The availability of competent laboratory technicians today has been definitely decreased, owing to the shortages brought about by existing conditions. Many technicians of both sexes are giving their services to the armed forces of our country. They will return, however, with more experience and training, again to render valuable service when peace is established. Many hundreds of others will be and are being trained in clinical laboratory methods and will be available when returned to civilian life. This gives the future a brighter aspect so far as availability of technicians is concerned.

Before the physical equipment of the laboratory is considered, a competent technician should be procured and then the amount and type of equipment should be decided upon through the collaboration of the medical director and the laboratory technician. In this connection, it is wise to give the technician considerable freedom, for, after all, she will use the equipment and knows what types give her best results. It is true that a wrong or unfamiliar tool almost invariably ruins a potentially good job.

The amount of equipment is dependent on the number of clinical tests to be employed and the space alloted. It is advisable to start with equipment necessary to run the most important and useful tests, and later add to the list as space and turnover allow. At the Chevrolet-Grey Iron Foundry of Saginaw, the initial cost of equipment amounted to something like $1000. This represented facilities for complete urinalysis, blood counts, Kline presumptive test for syphilis, Kahn test, sedimentation rate, sputum examination, staining of urethral and vaginal smears, and blood

typing. Originally the addition of equipment for bacterial cultures was in mind, but after critical consideration of its utility superimposed on our case turnover and available space the idea was dropped. Minor additions to the original equipment have been made from time to time, but these are negligible.

WITH the establishment of a working clinical laboratory as part of the medical department, certain changes of routine become necessary. These in reality are additions rather than changes. To make the laboratory of real value, accurate records must be kept. This entails the addition of reporting forms, filing space, and a certain amount of clerical work. Of course all these depend on the size and scope of the medical department and the case turnover. It is possible to revamp the record of physical examinations in such a way so as to include the laboratory findings. This, in the writer's opinion, is not advisable, as the laboratory findings are often of a more confidential nature than those of a routine physical or x-ray examination. All medical findings should be considered as privileged communications and treated as such. The time required to complete a physical examination is appreciably lengthened. The gathering of blood and urine specimen and their proper labeling requires time and, when multiplied by 20 to 40 such examinations, one can readily see that the addition of a clinical laboratory definitely limits the number of examinations that can be conducted in one day. However, a well staffed medical personnel and an efficient sequence of steps in the routine will conserve time. No matter how well planned and how efficiently executed the routine of physical examination is, the laboratory will slow down this particular function of the medical department. Aside from the routine examinations one must not lose sight of the check-ups and follow-up on some cases. These often can be more time consuming than the regular examinations presenting normal findings. Another important consideration is the recognition of the fact that the technician cannot take samples of blood and gather and label urine specimens, and at the same time actually run Kahns, blood counts, etc. This, however, can be easily overcome by scheduling all physical examinations for the mornings, leaving the afternoons free, as much as possible, so the technician can run, without too many interruptions, the samples gathered in the morning and prepare necessary reagents. Check-ups can be scheduled in such a way that they do not load up for one day.

So far the picture of the clinical laboratory in the industrial medical department is far from bright. It is a picture of disruption of well established and satisfactory medical routines; increases in personnel, more records, more space and, all in all, more work. All these factors must be considered at first glance as definite disadvantages of heavier or lighter weight that speak quite loudly against the clinical laboratory. So, like any other thing born with disadvantages, the clinical laboratory, in order to justify itself and promote its continuance, must present advantages which in the long run will outweigh its disadvantages. The inherent trials and tribulations must bring forth benefits greater than themselves.

LET US now consider the advantages and benefits which may be derived from an industrial clinical laboratory. To be of real and practical value, these advantages should not be to the benefit of a limited group, but should affect to greater or lesser degree the employer who provides the laboratory and the employee for whom it is primarily intended. Naturally the employer and employee stand in first line, and the advantages and benefits should be felt directly. Since all going industrial establishments and all their employees are functional members of a community, it is logical to assume that indirectly the community should be benefitted.

The benefits derived by the employer are reflected in several ways. The industrial clinical laboratory is a definite aid in the proper placement of employees by offering a more thorough evaluation of the physical condition of the old as well as of the prospective employee. The old employee with diabetes mellitus, nephritis, anemia and certain chronic infectious conditions can be checked at regular intervals and, on the basis of the findings, properly placed so that his health and usefulness can be conserved and safeguarded. Thus the employer is presented with a more accurate cross section of what may be called the "health of the shop." In the case of a prospective employee the clinical laboratory may uncover conditions which the usual physical examination would not disclose. All in all, it gives thoroughness to the pre-employment examination and often determines whether the prospective employee is accepted or rejected. This definitely lowers the employer's risk which is attached to each new employee. Another important benefit to the employer is the aid the laboratory affords him in checking the effects of certain materials such as volatile solvents, metals and fumes, thus playing an important role in the detection and control of industrial health hazards. Last but not least is the favorable psychological effect on the employee with respect to his employer. The thoroughness of the examination impresses the employee and convinces him that the employer has interest in his health and well being.

The employee stands to derive the greatest direct benefits. These apply equally to the prospective as well as to the old employee. The prospective employee in whose case a certain occult condition has been discovered is informed of its existence. If the condition can be remedied, advice is given him what to do in order to condition himself for acceptance. The old employee is given the opportunity of having a thorough check on his health which he would never have otherwise. If disease is found, he is advised of its existence and its gravity discussed. If the condition is of such nature that medical treatment is indicated, the family physician can be given a copy of the findings in the case, thus eliminating loss of time in starting treatment and, to a certain extent, lowering medical expenses. Such information is not volunteered in every case, but is given the physician at his request. In cases where an emergency exists the laboratory findings are transmitted to the attending physician if they are deemed of importance. Such cooperation of the medical department with the employee's physician adds materially to earlier diagnoses and often is instrumental in sparing the employee from complications and long disability. In the case of a diabetic the urine can be checked at regular intervals to determine whether or not the diet prescribed by his physician is adequate. Often a strict diet regime is upset by a change in the employee's working hours, as a transfer from the day to the night shift. By daily check on the presence or absence of glycosuria the employee can be greatly aided in coping with the changed conditions and his physician can make modifications in the diet much more accurately. Luetic conditions are often uncovered of which, in many cases, the employee is unaware. The fact that the industrial clinical laboratory makes early recognition of certain diseases possible and uncovers certain other occult conditions is in itself of inestimable value to the employee in directing him to proper medical care, and sparing him from prolonged suffer-

ing and possible protracted disability from complications and chronicity. To list numerous specific cases would be time consuming. The few general cases alluded to above are used to illustrate the scope and importance the industrial clinical laboratory may assume. Aside from many other beneficial aspects in favor of the employee, the psychological effect is most salutory. The knowledge that every employee can avail himself of this service transforms the almost ever-present distaste of reporting to the medical department just for the application of a burning and smarting antiseptic to a cut, a peek at his throat or a poke at his belly, into a definite desire to come in and find out what his condition really is. This desire, whether it springs from a true appreciation of the benefits derived or from a subconscious effort at self preservation, creates a force which instantly and continuously works to the advantage of the employee.

The benefits derived by the employee and the employer must affect indirectly the community of which they are component parts. The range of benefits extended into the community as a whole depends on the number of its members enjoying these facilities and the number of employers providing them. In the writer's opinion, one of the greatest benefits that a community is apt to derive from an industrial clinical laboratory is the detection of venereal disease. It is logical to assume that early detection of venereal disease will result in earlier treatment, thus decreasing the complications arising from neglected cases. With each case uncovered and properly reported, a source of contact is usually controlled and further spread of the disease from that particular source diminished. As in the case of syphilis, a check can be had at any time to determine whether or not the patient is responding to treatment. Cases of suspicious tuberculosis with positive sputum are reported to the proper authorities for control and treatment. Although indirectly, the industrial clinical laboratory makes a definite contribution to the maintenance of health of a community.

In conclusion it can be said that the clinical laboratory in industrial medical practice presents certain disadvantages from the standpoint of operation and finance. However, the advantages and benefits it offers to the employer and the employee, as well as to the community, justify its incorporation into the industrial medical department.

Control of the Lead Hazard

—In the Manufacture of Storage Batteries—

A. W. ELSTEN, M.D.,
Delco Remy Division,
and
GRANT WINN, Ph.D.,
Anderson, Indiana

WHEN the Delco Remy Division began the manufacture of wet storage batteries in 1928, the management, cognizant of the hazards to be encountered by workmen handling lead, instituted a health program. This program consisted of pre-employment physical examinations, and medical investigations of complaints of symptoms of employees which might be due to plumbism.

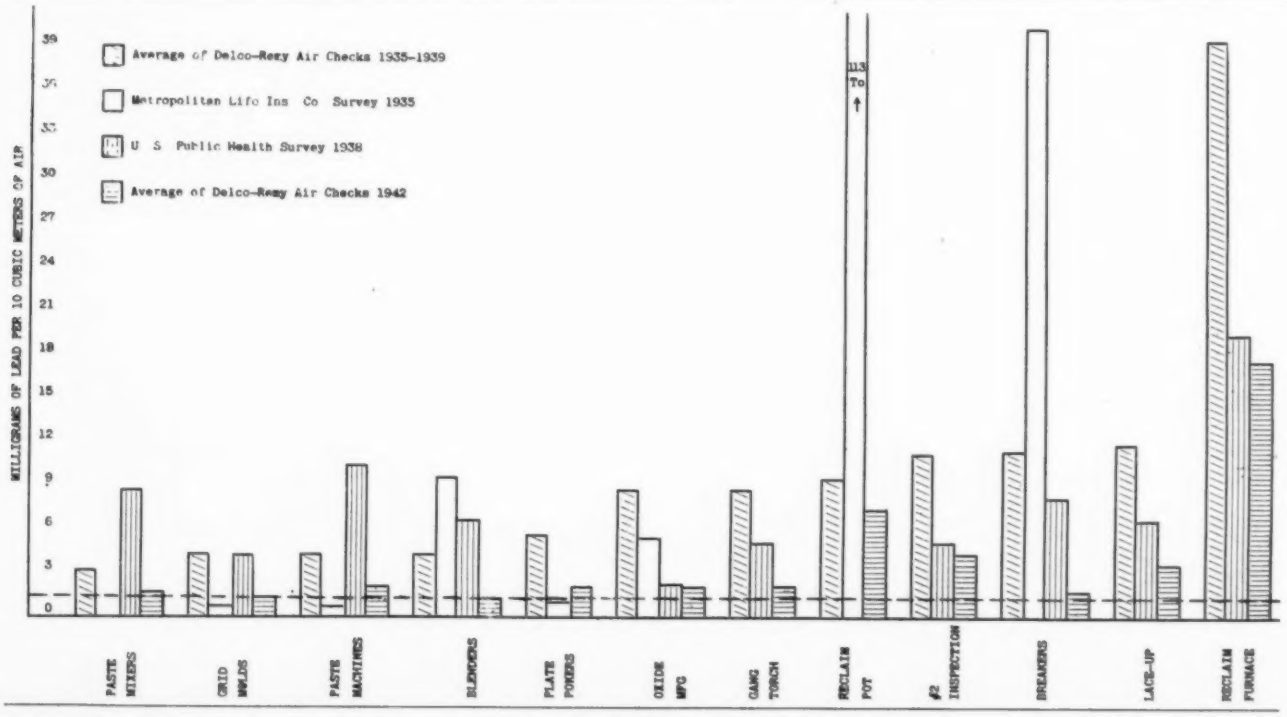
In 1935 this was supplemented by the addition to the staff of a trained laboratory technician who was also a registered nurse. Her duties included first aid administration and preparation of blood smears for the determination of stippling in the red blood cells. At this time air analyses to determine the amount of lead present were begun, using the impinger method to collect the samples.

Previous to this, the Metropolitan Life Insurance Company had made a survey of the plant including air samplings. A similar survey under the direction of J. J. Bloomfield was conducted in the plant in 1938.

In 1940 Dr. William Kruger, medical director of the Bloomfield, New Jersey, division, and I decided to expand the program, and Grant S. Winn, Ph.D., was placed in charge of the laboratory.

A rather broad program was instituted with these points in mind:

1. To determine the exposure to lead of our employees as measured by the concentration of lead in the air.



Graph 1

Graph 2

2. To determine the safe limits of such exposures.

3. To determine the necessity for and the frequency of periodic checks both of the plant environment and the employees.

4. To maintain the concentration of lead in the air of the manufacturing areas within safe limits.

5. To study the available clinical material as to what constituted lead intoxication, the effect of different exposure limits during periods of lead absorption, metabolism and excretion.

The management was fully cooperative in the investigation of our problems, and I wish to emphasize here that this is a prime requisite in the solution of any occupational disease exposure. Our first approach was from the engineering standpoint, the object being to produce a safe working environment. This, as we all know, was predicated on the assumption that the upper limit of safe exposure for lead was 1.5 mgm per 10 cubic meters of air. To illustrate the engineering improvements we wish to show charts prepared from the data of the Metropolitan Life Insurance Company survey in 1935 in conjunction with slides showing methods of control in present manufacturing processes. Comparable air analyses of the same areas will also be shown.

The earlier surveys employed the impinger for collection of the samples, and the chemical analyses of the samples were made by methods in vogue at that time which are now recognized as being less precise than those in use today. We now collect air samples by means of the M. S. A. Electrostatic Precipitator, and the chemical analyses are carried out by the dithizone extraction method as recommended by the Kettering Laboratories, in Cincinnati.

In conjunction with engineering control it was necessary to see that there was no human failure. This involved instructing the workmen in the matter of personal hygiene, especially in regard to cleanliness of the hands and mouth, and impressing upon them that we could give them a safe place to work but that we could not keep them from exposure to lead which contaminated the hands and might later be ingested with food and drink. To help the employee maintain a high standard of personal hygiene we installed lockers, showers and lunch rooms. These are housed in a separate building, completely out of contact with lead. The worker must leave the manufacturing plant, enter the personnel building, wash up and then proceed to the second floor lunch room for the eating of his meals. The sale of candy, milk, etc., is made only in the lunch room, and all eating and drinking of such must be done there. No food or drink is handled by men whose hands are contaminated by lead.

Digressing momentarily, the numerous theories offered for the prevention of lead intoxication by the administration of milk, vitamins, calcium or other substances were disregarded and we proceeded on one assumption only: THE ONLY POSSIBLE WAY TO KEEP A MAN FROM BECOMING LEADED WAS TO KEEP LEAD AWAY FROM HIM.

The charts showing manufacturing processes for obvious reasons cannot be published.

Graph No. 1 shows the comparative results from surveys made by the Metropolitan Life Insurance Company, the survey made under the direction of J. J. Bloomfield, the average of our own results for the period 1935-1939, and our average results for the year 1942. The average concentration of lead in the air has been lowered until in 1942 we were operating within fairly close range of the 1.5 mgm per 10 cubic meters with the exception of two high areas where respirators are being worn.

Graph No. 2. shows the percent hemoglobin average of 33 men in these areas from the period of January, 1936, to February, 1943.

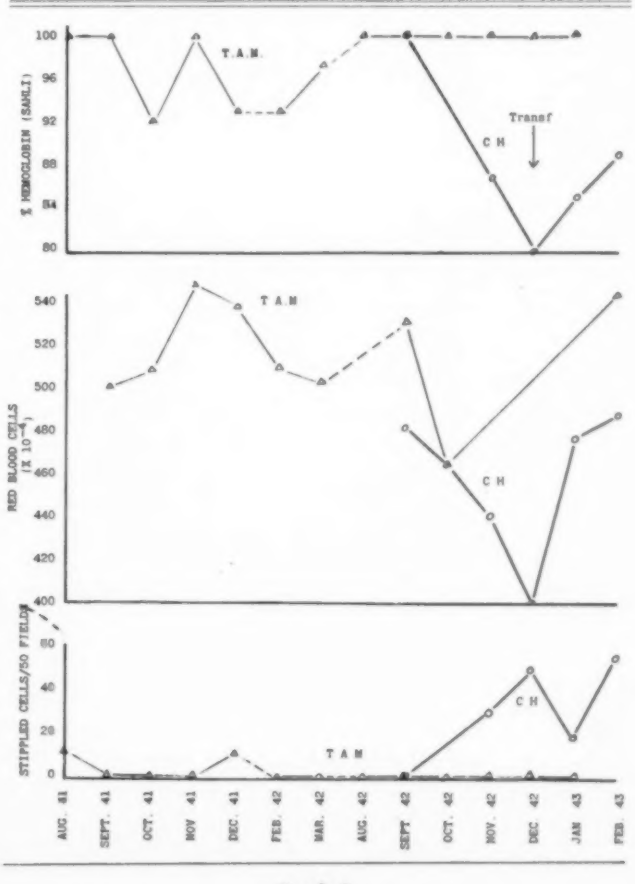
Graph No. 4 shows the average stipple cell count for the same periods.

Graph No. 5 shows these two graphs superimposed on the graph of the average lead concentration in the air, and we see the immediate results of a lessened exposure reflected in a rise in hemoglobin and the lowering of the stipple cell count.

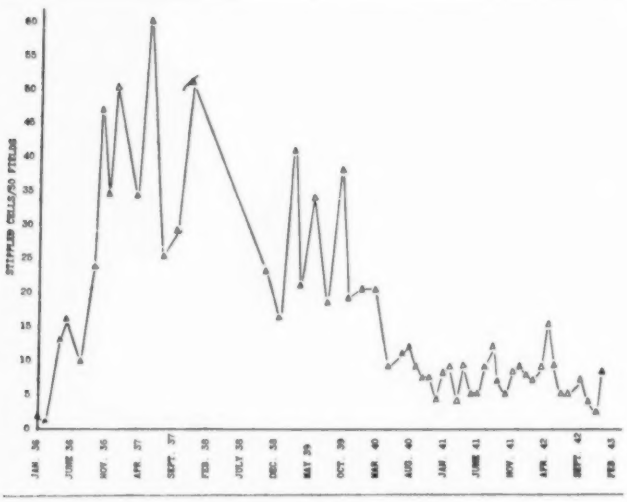
Graph No. 6 illustrates what can happen, and what did happen when a change in manufacturing processes was introduced. We detected this immediately through our periodic surveys of the plant, and immediate control measures were instituted.

Graph No. 3 is a curve of two men depicting their blood pictures in terms of hemoglobin percent, total red blood cells and stipple cell counts per 50 fields.

T. A. M. Good personal hygiene. C. H. Very poor personal hygiene.



Graph 3



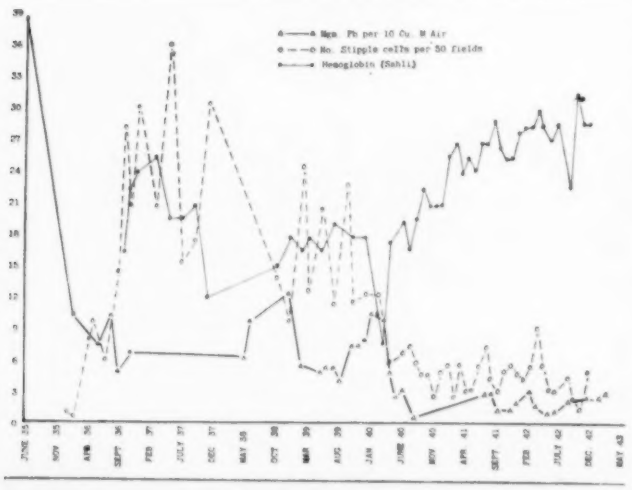
Graph 4

These men working in similar exposures show how great a problem personal hygiene is. T. A. M. never shows evidence of lead absorption, while C. H. rapidly showed signs of early plumbism and he had to be removed to a lead free environment.

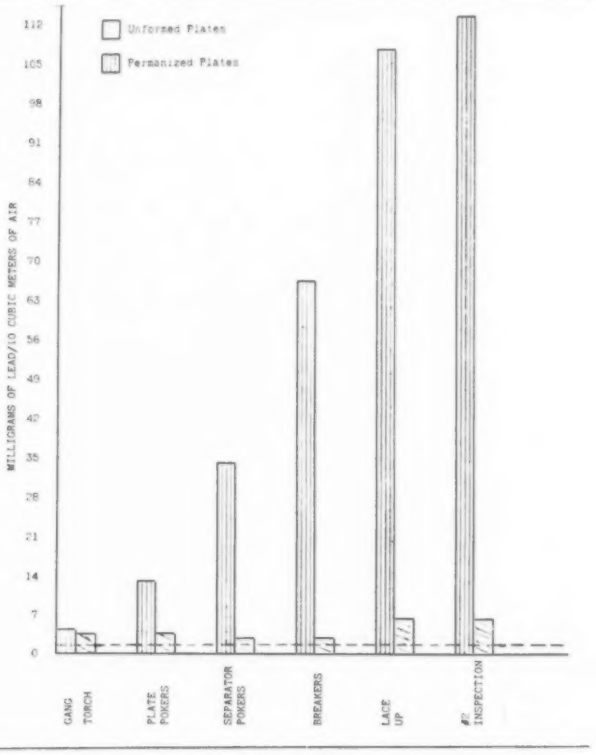
OUR WORK has only begun in determining the safe concentration of lead permissible in air which workers must breathe. We have tentatively decided that an atmosphere containing not more than 3 mgm. per 10 cubic meters can be considered safe if competent medical supervision is maintained. A spot survey of a plant with no follow-up gives very little useful information as to the actual conditions existing in that plant. Conditions change hourly.

In conjunction with all the engineering improvements, it must be remembered that changes in processes, human failure to maintain personal hygiene, and the failure of mechanical safeguards may produce an increased exposure to the workmen. These are detected by periodic physical examinations, routine blood smears and chemical analyses of urine for quantitative lead excretion. Where it is impossible for the time being to maintain a low exposure, the men must be given protection by means of respirators, with the ultimate aim to correct the exposure so that a safe concentration of the lead level is reached and maintained.

We have found the things most likely to cause changes in the plant environment are:



Graph 5



Graph 6

1. Changes in manufacturing processes.
2. Periods of increased production.
3. Seasonal ventilation.
4. Failure in mechanical safeguards.
5. Poor housekeeping.
6. Human failure.
7. Resting on the oars.

Practical Nutrition Program

—For Industry—

W. A. SAWYER, M.D.,
Medical Director, Eastman Kodak Company
Rochester, New York

THE proper nutrition of workers in our wartime industries is a subject of increasing interest. Today more than ever, we are becoming conscious of the importance of the right fuel for the human engine. This is an especially critical problem under the exigencies of rationing at the present time. Good nutrition will produce a maximum of energy and contribute to better health. It will prevent borderline nutrition deficiencies, assist in the reduction of absence from work, and make for more and better production.

A great many surveys have been made which show the rather alarming prevalence of dietary inadequacies. The study of meals in our organization among 1741 workers revealed the following:

	Men	Women
Adequate Breakfast	67.8%	50.0%
Adequate Luncheon	73.7%	63.2%
Adequate Dinner	90.5%	91.0%

In the Eastman Kodak Company we started in 1922 to interest ourselves in this problem of nutrition. We found from our sick benefit records that there was a high percentage of sick cases produced in part, at least, by what seemed to be inadequate diets. Certainly, dietary indiscretions could be given as the cause of

much of this sickness. Miss Laura Comstock became our nutrition adviser at that time. During Miss Comstock's 15 years in this position, an effort was made to inculcate into our health education a better conception of the values of proper nutrition. This was accomplished by personal consultations, printed material, exhibits, group discussions, and education of the doctors and nurses in the medical department. Only in an indirect way were the cafeterias influenced to have better menus. No direct control was exerted over their operation.

We believe that absences were reduced as a result of this effort. More attention was paid to the overweight and underweight groups, and studies were conducted of mid-morning and mid-afternoon feedings using such things as milk, bananas, and malted milk. A study was made over a period of several years on the value of cod liver oil and vitamin A and D concentrates. A certain improvement was evident in the health of the employees. Furthermore, Miss Comstock's activity as president of the American Dietetic Association and her interest in local and state nutrition groups were valuable from the industrial relations aspect.

The second phase of our nutrition program began in 1941 when Miss Frances B. Floore started work as our nutrition adviser. It became evident at this time that more effort should be made to assist the cafeteria managers in our different plants in the scientific aspects of good nutrition. To date, in two of our cafeterias, a great deal has been accomplished toward improving the service.

FOR a long time, I felt that there should be some more direct influence by the medical department. Good nutrition is as essential to health and well-being as proper sanitary conditions. The physician in the plant should have some supervision, if only in an advisory capacity. The setup in our organization for this purpose is as follows:

Practical Duties of Nutrition Adviser:

1. Conducts surveys.
2. Outlines organization.
3. Locates dietitians.
4. Holds staff meetings.
5. Consults and helps in emergencies.

It is my conviction that no plant food service is properly organized if it does not have a trained dietitian in charge of it. What do we mean by a trained dietitian? "According to the definition of the American Dietetic Association, 'a dietitian is one who has had college training in the science of nutrition and management and is proficient in the art of feeding individuals or groups. Formal training necessitates a bachelor's degree from an accredited college based upon a major in nutrition or institution management usually given in the division of home economics at the college. In addition, the American Dietetic Association recommends a fifth year of directed experience in an approved training course for student dietitians'."[1]

"The service of food and the nutrition of the employee is important enough to warrant a dietitian for its direction. Her training will have taught her the best ways to cope with the emergencies that arise today, such as food shortages, employment problems, rising food costs, increasing personnel to feed, and feeding around the clock—to mention only a few.

"The dietitian knows what foods are necessary for good nutrition. She knows how to carry on food cost studies and which foods are good buys or which ones are expensive 'at any cost.' Her training has given her an insight into employment problems and their adjustments so that she should be able to organize and build an efficient department, and to outline work schedules and keep them running smoothly. She knows how to purchase food to good advantage and how to plan wholesome, colorful menus. She can teach the cooks how food should be prepared to preserve some of its original qualities and be appetizing and interesting. She will take special care to see that it is served attractively and its merchandising value considered. Through careful food cost studies she should be able to reduce all her food costs so that the food sold on the counters will be at a price low enough to encourage its sale. Anyone can serve or sell expensive food, but it takes years of training, experience and sound judgment to keep the food cost down and the prices in line with the pocketbooks of those who come along the cafeteria counter."[2]

Perhaps it is well to say here that we prefer company management of our cafeterias rather than that by a concessionaire. There are several reasons for this. First of all, we believe that the food should be sold as nearly at cost as possible. When concessionaires manage them, there has to be a profit. Moreover, there is sometimes criticism on the part of the employees. They do not want to eat in plant cafeterias because the company is making money on them. A more direct control is exerted by the management if it conducts the cafeteria, and a better menu can be provided.

We have mentioned above the practical duties of the nutrition adviser. Under her supervision is the dietitian manager. Her duties are as follows:

1. Purchases food.
2. Supervises preparation.
3. Supervises serving.
4. Plans menus.
5. Keeps perpetual inventory.
6. Keeps food costs.
7. Sales promotion.

The rapid growth that a cafeteria will undergo if conditions are improved has been shown by our own experience. From one of our cafeterias which was rehabilitated and moved into new quarters, we have the following figures:

NUMBER SERVED IN CAFETERIA

Trick	Feb. 15, 1942	Feb. 15, 1943
A	600	2,000
B	200	850
C	0	600
Total	800	3,450

It was felt that this increase was due to:

1. More employees.
2. Better food.
3. Dietitian's interest.
4. New cafeteria.

Chart I shows the increase in the average meal check as a result of improved conditions. It is generally agreed by most dietitians that the amount of the

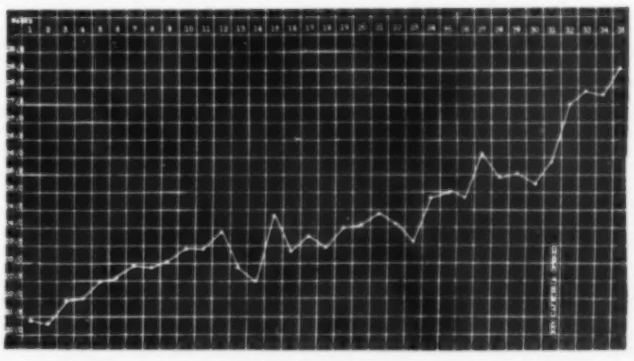


Chart 1. Camera Works Cafeteria—Average Meal Check

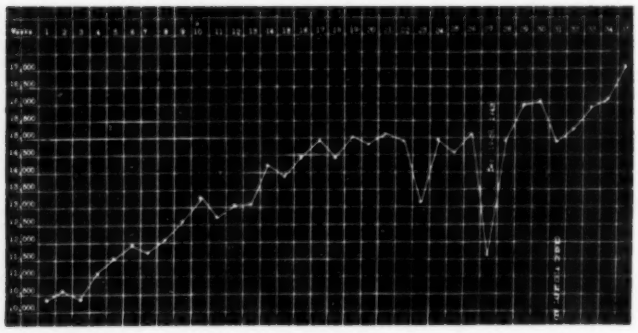


Chart II. Camera Works Cafeteria—Number Fed Weekly

meal check is indicative of whether or not the meal is a balanced ration. If workers are buying soft drinks, tea, or coffee and a sandwich, the average check will be relatively low, but if they are buying a plate lunch or a complete meal, the check will be somewhat higher. Such a record should be kept in all cafeterias.

Chart II shows the increase in the number fed each week in this same cafeteria. The percentage of workers in the plant who eat in the plant cafeteria is usually far below what it should be, due to a variety of reasons. In a survey which was made through the American Association of Industrial Physicians and Surgeons, it ran all the way from 25 to 100%. The percentage of patrons may be explained, of course, on the basis of location of the plant, accessibility of the cafeteria, rapidity of serving, cost of food, type of menus, cleanliness, attractiveness of quarters, etc. If a cafeteria is doing a good job on a modern, scientific basis, the patronage should be over 70%.

CHART III.
CLINICAL
(INDIVIDUAL INSTRUCTION)

1. Overweights. 2. Underweights.
3. Ulcers—diabetics.
4. Vitamin deficiencies (borderlines).

Personal History
Height, weight, age, desired weight.

Food History
Breakfast, lunch, supper, snacks.

Diet Instruction
1. Diet outlined.
2. Vitamins prescribed if necessary.
3. Milk passes.
4. Referrals to doctors or laboratory.

Chart III indicates the type of work done under the clinical phase of the program.

CHART IV.
OVERWEIGHTS
RESULT OF OVEREATING

Diet advised because of:
1. Hypertension. 2. Diabetes.
3. Gall-bladder or kidney trouble.
4. Appearance (vanity). 5. Inefficiency.
6. Relatives or friends insist.

CHART V.
UNDERWEIGHTS
RESULT OF UNDEREATING

Interested in gaining because of:
1. Fatigue. 2. Nervousness.
3. Weakness. 4. Inefficiency.
5. Relatives or friends insist.

Charts IV and V indicate the work done with overweights and underweights. I regard this part of the work as the most important of all. It requires a nutrition adviser of good training and personality. She must know how to deal easily and agreeably with people. It is surprising how willing individuals are to accept this sort of service, and they will report back voluntarily periodically for it. Results can only be obtained by the periodic visits. It does not consume a great deal of time, the results are striking, and the satisfaction on the part of the individuals is outstanding. There is a great fascination to the individual employee in watching his personal chart go up or down, as the case may be. Workers are sincerely interested in themselves, and, if given the proper guidance, will cooperate surprisingly. Of course, a great deal depends upon the spirit in which it is done.

CHART VI.
EDUCATIONAL

1. Group instruction. 2. Plant magazine or paper.
3. Pamphlets—printed forms.
4. Nutrition movies. 5. Exhibits. 6. Posters.
7. Research projects.

Chart VI gives an indication of the possibilities in a nutrition educational program.

Now a word about the value of such a scheme. As a morale and good will builder, it seems to me there is nothing much more effective. A nutrition program should be rated high on the industrial relations list of worthwhile projects. Management has too long considered the cafeteria a headache to be relegated to the list of things which have to be endured, willing to let anyone manage it who will take it off their hands.

When you consider the funds that are spent by industries in employee activities that, perhaps, return less of positive values, it would seem that a good nutrition program rates as a distinctly valuable project. There are many industries which will testify to its value and believe that problems it presents, if conscientiously worked out, will justify the effort. I recently heard of an instance in Canada in which the management was convinced against its will that it should undertake providing adequate restaurant facilities, and after considerable discussion undertook it. The results were so outstanding that everyone became enthusiastic about it and said it was one of the best things that had ever been done there. It is my judgment that it builds good will, health and efficiency. The more outstanding it is made, the greater will be its success. We all appreciate the effect upon an individual of a good, square meal. He goes back to his job feeling comfortable, satisfied, and convinced that he works in a pretty swell place.

We must not measure its value in dollars and cents. Those who control it should not keep the balance sheet too much in the foreground, but rather the quality of food served and the extent to which it is patronized by the employees. Even if management has to subsidize it to a fairly large extent, it will still be money well spent.

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1. Dietetics as a Profession. American Dietetic Association, 1942.
2. "What Industry Can Do to Improve Nutrition." W. A. SAWYER. To be published in *Principles and Practice of Industrial Medicine* by the Williams and Wilkins Company.

THOSE responsible for our workers must come to a realization that fatigue which slows up output does not always have its inception within the factory, the workshop, or the office. Conditions which affect the daily life of the worker—economic, domestic, and sociologic—are of equal importance and merit careful consideration. The far-reaching social implications of fatigue and its effect upon community health place the responsibility for its recognition and control not alone on the physicians in industry but also upon physicians generally.

From "The Role of Fatigue in Industry," by GEORGE MORRIS PIERSOL, M.D., in *Pennsylvania Med. J.*, February, 1943.

Refresher Course Questionnaire

OHIO STATE Medical Association's Sub-Committee on Educational Refresher Courses, of which DR. D. W. HEUSINKVELD, Cincinnati, is chairman, discussing the feasibility of sponsoring one-day post-graduate meetings in industrial health for Ohio physicians at various points in the state, decided to try to gauge the demand for such courses in Ohio by means of a questionnaire as follows:

ARE YOU INTERESTED IN REFRESHER COURSES ON INDUSTRIAL HEALTH?

(Clip this; submit your comments; mail to the State Medical Association)

It has been suggested to the Committee on Industrial Health of the Ohio State Medical Association that it present refresher courses on industrial health for Ohio physicians as a part of its program to promote better health among industrial employees. Would you be interested in attending such courses? You can help the committee in planning its program by setting forth your views on this questionnaire.

* * * *

I would be interested in attending a series of one-day refresher courses in industrial health and medicine at a center near my home.....
(check)

* * * *

I would be interested in taking a more intensive course in industrial medicine, perhaps a two or three weeks' residency, in some Ohio industry with clinical instruction by members of the medical staff of the plant if such courses can be arranged.....
(check)

Signed .....Address .....

Wisconsin's Industrial Hygiene Unit

DR. PAUL A. BREHM'S Industrial Hygiene Unit of the Wisconsin State Board of Health serves as an advisory agency which was established to study health problems in Wisconsin's industry and to advise and counsel all those having industrial health problems who desired the unit's help.

Industrial Hygiene activities are purely fact-finding in nature. Studies and investigations are made in all types of industrial establishments to determine any working conditions which may influence the health or safety of the workers. When such conditions are found, recommendations for control of the hazards and improvement of the general working environment are made to management.

The Wisconsin Unit's specific activities have been as follows:

1. Planned studies for the evaluation of health hazards from exposure to toxic dusts, fumes, vapors and gases.

A. Twenty-four milk canning plants were studied under winter and summer conditions for exposure to lead fumes and dust.

B. Sixteen brass foundries studied under winter and summer conditions for exposures of lead, zinc and manganese fumes and dust.

C. Fifteen paper mills surveyed for occupational exposures in connection with absentee studies.

2. Miscellaneous investigations in all types of industries and for many different hazards. These studies were conducted at the request of labor, industry, industrial commission, insurance carriers, physicians, nurses, health officers and local residents. Total planned and miscellaneous studies were as follows:

	1940	1941
Number of plants studied	218	256
Number of laboratory determinations	1,343	1,814

3. Industrial hygiene nurse studied nursing facilities and problems in 90 large factories employing 122,000 men and women.

4. Sponsored a symposium on Industrial Public Health Nursing services. Held in Milwaukee, February 20-22, 1941. Total registration, 508. Out of state attendance represented 12 states and the District of Columbia.

5. Absentee studies in 15 paper mills employing 7,500 men and women. Health educational programs have been organized on the basis of the health problems found.

6. Cooperation with such groups and agencies as the State Medical Society, the Industrial Commission, Labor Unions, Manufacturers' Association and industrial organizations, Nursing Associations, Wisconsin Council of Safety, National Safety Council, U. S. Public Health Service and local health agencies.

7. Educational activities included lectures to medical students and student nursing classes; talks before industrial safety organizations, industrial and labor groups, public health nursing classes, medical society meetings and public health nursing conferences. Papers were presented before national medical, safety and industrial hygiene conferences.

8. Research: Devising new methods of chemical analysis and construction of field sampling equipment. All laboratory analyses and research studies are made at the State Laboratory of Hygiene.

Absenteeism Control

J. J. WITTMER, M.D.,
Medical Director, Consolidated Edison Company, New York

THE importance of lost time due to genuine illness, pseudo-illness, convenience illness, malingering or hypochondriacism needs no emphasis. The great national interest in the general subject of absenteeism gives my particular subject a tremendous significance when related to the war effort. If this type of absenteeism were eliminated, it would mean the addition of two million workers to the industrial rolls; not two million trainees or physically handicapped workers, but two million skilled workers. This figure results from the simple arithmetic of dividing the more than 400,000,000 skilled man-days lost last year by the number of working days in the year. Even if this type of absenteeism were decreased by only 50%, the equivalent of another million skilled men would be turning out the products of war. I firmly and sincerely believe that a 50% decrease is the minimum that can be obtained.

Absenteeism must be thought of in two classifications; first, the involuntary—the absence due to an honest to God incapacitation by illness or injury; and second, the voluntary—the absence caused by the worker who is not willing to face his part in the real job that is besetting us, and therefore takes time off from the job for the slightest excuse. Which class causes the greatest amount of lost time has not yet been worked out. But the fact remains that the voluntary absence can be eliminated with proper measures. It is also a fact that most industrial injuries and illnesses can be avoided with an adequate and properly functioning medical and safety organization.

The reduction of involuntary absenteeism requires constant and energetic attention. There is no one outstanding answer to this absenteeism problem. Absenteeism can be reduced only by the accumulated efforts and deeds of management and labor. Adequate coverage of the problem requires that attention be focused on three major fields of activity: I—Safety program. II—Health program, and III—Labor-Management program of supervision of absentees.

I will not attempt to explain nor to justify to you the necessity or the benefits to be derived from an adequate safety program. We all agree that such programs are successful only when backed enthusiastically by management and having the whole-hearted cooperation of every employee. Yours is the problem of providing this program for management's backing and enlisting labor's cooperation.

Paralleling the safety program, there must also be a comprehensive and intensive health program which will cover the employee before he goes on the job, while he is on the job, and when he is off the job. The first condition requires an adequate procedure for pre-employment or preplacement examinations.

Presented at the Fourteenth Annual Safety Convention & Exposition of the Greater New York Safety Council, Inc., March 23, 1943.

A properly conducted pre-placement examination, with the idea of fitting the employee into a job for which he is physically as well as mentally equipped, is the first important method of preventing future trouble and absence. We would not think of using a delicate tool for work for which it is not intended. The same thing is true of human beings. Pre-placement examinations are not performed with the thought in mind of whether the man can or cannot work, but rather, with the limitations that this man has, what job can he best do without causing injury to himself, to his fellow employees or to his work. In addition, certain defects can be elicited which, if cleared up, will not only make a better worker, but in a great many instances may be the means of avoiding lost time by the arrest of a progressive or degenerative disease. Therefore, this examination should not only be a review to determine the availability of the man for work, but also must include advice as to correction of beginning disablements and thoughts on how to keep healthy. Fit the man into the job, not the job into the man; then immediately start him on a program that will keep him on the job every working day of the year.

The well-organized health program for keeping the employee on the job provides for a well-equipped and staffed medical department charged with the responsibility of determining and handling of existing medical conditions of the employees, recording of facts and conditions so that the health problems may be studied and possible solutions developed and finally, preventing of employee illness or perhaps better called, building employee health.

All sick cases must be referred to the medical department as early as possible. It is of primary importance to get sick people off the job early in their illness. Diagnoses made at the beginning of the illness and the institution of prompt treatment prevent more serious conditions arising in the individual and also decrease the possibility of dissemination of the disease. This procedure confines the absent time due to illness to the particular employee involved and helps to return him to work sooner than would be possible otherwise.

This practice will not be necessary nor justified in many of the cases sent to the medical department. Very often an employee will have only minor ailments and be able to be up and around. Diagnose and treat these minor ailments. As much as possible, and without hazard to the employee, keep the employee at work by offering competent medical advice and supervision.

THE services rendered by the medical department of a company should be more extensive than are usually found in most industries. These services can be operated and run at a cost that is not excessive either to the employee or to the company. Medical treatment should not stop after the plant doctor has told the employee that he has a cold. Treatment should start in the plant. If the man is confined at home, this treatment should be continued by the medical department at home, or if necessary through the hospital, until the worker is ready to return to the job. In this way, a continuing and consistent treatment can be instituted. The employee's illness is checked from its origin to its end. He will remain at home long enough to get well, but not too long. The plant physician, knowing the type of work which the worker is doing, is the doctor best able to ascertain definitely when the man is ready to return to that type of work.

When employees have been ill and absent under care of their own physician or without any medical care, they should be carefully checked before returning to work. An adequate period of treatment and convalescence is necessary to prevent recurrence. Many accidents have as their basis the fact that the employee had not fully recovered from his illness. Moreover, contagious diseases have a period of infectivity and no one should be allowed to return to work until he is considered completely free from infection.

Further, all such absences should be established as due to genuine illness. Employees who have been absent for three or more days, should be required to present medical evidence to justify their absence. This has not only the basis of ascertaining that the illness is genuine, but, also, it insists that the employees obtain medical help at an early stage of their illness. We all must agree that an illness can be shortened by the institution of intensive and proper treatment at the first symptoms of an onset.

These steps of examination, treatment and checking make it possible to develop a useful record of absenteeism and illness. Comparative statistics, intra-departmental and inter-departmental, should be formulated monthly. These statistics would show the batting averages of absenteeism, so to speak, with reference to short and long duration absences, on a monthly comparison and departmental comparison basis. One generally finds that the departments having the poorest rating seldom allow themselves to have the poorest rating for very long. Discussions can be held with the various supervisors, and they in turn, can talk to the employees and call to their attention the fact that the departmental averages are below par. These statistics are of value also to the medical department in planning its programs for activities in the fields of preventive medicine and health education.

ONE of the major possibilities for effective preventive medicine on an individual basis lies in periodic physical examinations. It is rather difficult in these days of hurry and bustle to have the ideal program of mandatory periodic physical examinations. However, it is quite possible to attack this by making certain employees undergo a complete physical examination. When an employee has had three short absences in a six months period, he should be thoroughly examined and an effort made to determine why he is having these absences; and more important, what can be done to stop these absences. Further, any employee who has been absent for three or more weeks should undergo a thorough physical check-up. This check-up may bring out hidden conditions which can be treated and recurrences avoided.

Another possibility for effective preventive medicine on an industrial basis lies in the consideration of the psychology of the employees. Many workers lose time from work and honestly do so because of phobias of the job, phobias of the supervisor, and even phobias of phobias. There is no doubt that these people can do a good day's work if they are put in the right kind of work. We all know that the happiest people are those who, in so far as possible, have taken as their vocation that which to them is an avocation. They have an interest in and like what they are paid to do. We, in management, can aid materially in having the employee become interested in his job. Job adjustments should be made readily and easily whether the adjustment is necessary from a mental or a physical standpoint. You need not fear that this will keep the organization in a continual state of flux. Rather, having made the initial adjustments, you will then have a productive and stable force of well-integrated employees. During convalescence, part-duty assignments are necessary. The employee's time does not need to be totally lost and it is often to the benefit of the employee if he is given some work to do.

Sometimes home troubles interfere with an employee's work, consciously or unconsciously. I have in mind the case of a skilled employee who was mentally disturbed over the illness of his son at home. Being preoccupied, he suffered an injury in a cement mixing machine which resulted in the loss of one of his arms. In this particular case, the foreman had noticed for some time that the employee was not quite up to his usual standard, but he had made no effort to determine the cause. At foremen's meetings, we must emphasize the importance of the foreman watching for these below par or mentally preoccupied employees and urge them to visit the medical department whenever a medical problem may be concerned—a foreman who is well acquainted with the moods, temperament and characteristics of his men will be able to see when the employee's attitude or ability is changing. He will make every effort to find out the reason for the change and take steps accordingly. An alert foreman, who is closely associated with his men, will send the employee to the doctor long before a condition becomes acute, and thereby possibly abort a prolonged absence.

When we shift our consideration from the individual employee as such to the individual employees as entities in a large group of employees, then we can appreciate the

importance of preventive medicine in the health program. Remember, however, that preventive medicine is not a technique that will eliminate all illness but rather a rational approach to medical problems that are common to groups of people. Hence, my emphasis previously in maintaining adequate records. Each individual in the group will not be benefitted to the same degree nor will each individual react exactly the same. However, by directing attention toward preventing the incidence of illness and toward increasing peoples' resistance to illness, greater benefits may be derived in the form of days at work than from the expenditure of the same amount of effort in restoring individuals to work after illness strikes. Recognize that both are necessary and that they complement each other and you will have the most effective health program.

One of the most persistent problems to be handled is that of upper respiratory infections which cause about 50% of all short time involuntary absences. Medicine therapy has been advocated in some instances to abort these infections. The question of how much good inoculations do is still to be answered. There are some physicians who feel that they are of distinct benefit and still others who believe that inoculations have little if any merit. In my own experience, after giving thousands of cold inoculations, I feel that they are not by any means the complete answer to the cold problem. In one controlled series 10 years ago, we gave 4000 employees a series of inoculations but were unable to observe any major benefits. I believe that they help some and are just so much water to others. If an individual is susceptible to a specific organism and that organism is included in the vaccine, it will immunize; but where there is no specific susceptibility no immunity will result.

My conclusions on inoculations at this time would be that all defects that lower vitality should be cleared up; that the patient be instructed on the proper rules of health; such as diet, clothing, rest, exercise, staying away from those who have colds, etc. If after that, colds still recur, inoculations of cold vaccine may be attempted. There is a 30% chance that the worker still following the regime listed above may remain free of colds.

A general preventive medicine technique that is valuable is to provide rest periods for employees who are on repetitive routine work. These are useful in relieving physical and mental fatigue. Rooms for eating or for relaxing in restful surroundings are valuable in breaking nervous tension. Where plants are located in neighborhoods where there are no good luncheon facilities, at least a room where employees can eat the lunches they bring should be provided. For women employees, too, rest rooms where they can read, knit or just relax during their lunch hours or rest period are helpful. In some locations, mild exercise apparatus can be provided for those who wish to use it.

One of the important factors in maintaining the health of employees doing specific jobs is a particular need for vitamin therapy. Employees, for instance, who are subjected to acute and continuing visual stress, require more vitamin A than those who are not under such stress. Workers who have to make fine distinctions between colors are also in need of extra amounts of vitamin A. Vitamin B and its consorts can be used for those jobs that cause unusual mental and even physical fatigue. There are many uses indeed for these vitamins, and it behooves the medical director to check those employees who are doing unusual specific types of work to ascertain the vitamin need in these cases.

Certainly the question of proper nutrition must be studied by each medical director. Advantage should be taken of the usually fine educational material available on this subject. Aside from the consideration of the adequacy of regular meals, between-meal feedings are a distinct asset in those industries which either are keyed to a high tension or are producing on the assembly line basis. The basic idea of allowing the worker to take nourishment not only has a value in sustaining a continued anobolic action for reserve energy, but particularly allows the individual to relax and get away from the extreme physical tension, and allows his nerves and muscles to relax. The resultant pick-up from such relaxation is indeed worthwhile.

A most fruitful field of activity is that of health education. Various methods of education in hygiene may be used, such as articles in house organs, the use of posters or talks to groups of employees about some special conditions which require care. These means have been particularly effective in accident prevention campaigns and can be equally effective in health maintenance. It should be remembered, however, that employees, like the rest of us, develop a certain resistance to "preaching," particularly in the mass, and are likely not to pay much attention to general talks on the prevention of diseases which never seem real or to concern them personally. Probably the most effective health education consists of face-to-face talks with the doctor specifically about the patient's own condition. Advice which comes when it is needed, and which applies to one's self, is of more value than all mass education. The ideal time for this education is during the periodic health examination. The other education is also necessary and the time spent in developing an effective program will be well repaid.

One more point of hygiene. In my opinion, every effort should be made to urge employees who live within a mile and a half of their place of employment to walk to and from work. All the vitamin therapy, health education or other protective measures cannot be a barricade against the flood of organisms which one undergoes coming to and from work in overcrowded conveyances. In addition, the exercise, the fresh air and the increased circulation from walking in itself gives a resistance. That simple bit of preventive hygiene would probably accomplish as much as a mile and a half of drugs. Transportation, housing, shopping, etc., are all contributing factors and should not be overlooked, but since they would require a separate and complete discussion, I will not attempt to cover them at this time.

WHEN all steps have been taken as matters of control there is a final activity in the reduction of absenteeism, namely a labor-management program of supervision of absentees. This can be presented rather quickly although its development as an effective program will require careful study and attention. Its value in reducing involuntary absenteeism lies wholly in the field of short-term absences. Far exceeding this, however, is its potential value in solving some of the problems of voluntary absenteeism.

This program involves the thorough checking of every absence from work and keeping a record of each absence. The record should state the date of absence, the day of the week, the number of absences and the specific reasons.

This may sound complicated, but it can be easily maintained by each supervisor. A committee consisting of two representatives of management and two representatives of the employees in each department should be set up. Where a union, as a bargaining agent, is concerned, the employee representatives must not be part of the grievance group.

When an employee has had, within six months, two absences that have been deemed voluntary, or a total of four absences, including involuntary absences, he must appear before the joint committee. After hearing the case, the committee may appeal to the employee's patriotism and issue a warning or mete out a penalty. Another voluntary absence in the next six months would involve a definite penalty. This may involve a suspension from work without pay, a demotion in rank with pay decrease for a period, or, in flagrant cases, discharge.

This procedure would be taken on the basis that the efficient operation of the working force requires that all employees maintain satisfactory attendance records. We can sympathize with the cases of employees who have single absences, possibly of extended duration, caused by operations or definite illnesses, but we cannot tolerate employees who have frequent absences of more or less short duration. Not only is the production of the absent employee lost, but a reduction in the production of the group results from the necessity of making interim arrangements to cover his absence. One employee penalized is a lesson to many others. In these times of manpower shortage and of the need for all-out production, the luxury of such a form of absence must be given up either voluntarily or by compulsion.

Such a program would, to my mind, attain definite results—provided, however, that by government fiat or by mutual agreement of industries in a fixed area, the worker could not obtain work in another industry while he is under suspension, or could not be given a job at his old grade if he were demoted or discharged. This method would work—particularly if industry would check the previous employment of the applicant before hiring him.

To conclude, there are almost two million skilled workers that can be made available by decreasing absenteeism. Effective action in this direction can be accomplished by following: first, an intelligent and active safety program; second, a well organized program of medical and health supervision; and third, a definite plan of labor-management cooperation which will penalize that small group of workers who are shirking their legitimate responsibilities.

The Industrial Physician

—And His Relation to Absenteeism—

J. J. WITTMER, M.D.

AFTER attending many medical conferences, personnel meetings and safety conventions during the past year and talking with a large cross-section of individuals, I am wondering seriously how many doctors in the industrial medical field have instituted a well thought out and practically coordinated program for controlling sickness absenteeism and stepping up efficiency through health measures in their particular industry.

Medical control of absenteeism and increased efficiency is not an innovation in industrial medicine. These two objectives have been the prime goals of the industrial medical director since the very beginning of this specialty. Most of us have accepted this role as part of the routine of our work. Today, however, the problem is considered of extreme importance when related to the war effort, and scores of individuals in all walks of life have taken it up as their own particular hobby, justifiably or not.

Probably the most important index of the success of the practice of industrial medicine is the amount of absenteeism existing in a plant. I feel very definitely that the industrial doctor plays the largest part of all in controlling this "loss of time" from work. We as a medical group must hold on to this control. We must not allow it to be taken over by others who are not equipped to handle the problem, who do not have an understanding of the underlying principles, and who cannot have even a basic answer for a solution. We must be alert to the medical needs of today's tremendous industrial demands, and must be in a position at all times to offer a possible solution to each medical question that arises.

It is really the doctor's role to apprise management of the various conditions that contribute to illness, to coordinate all factions in management in the common goal of elimination of the causes of sickness, to obtain the employee's cooperation in a preventive medicine program and, finally, to institute an intelligent procedure to clear up illness in the shortest possible time consistent with the practice of good medicine.

IT BEHOOVES every one of us to take inventory of ourselves and find out just where we stand in regard to an up to date and well functioning medical department. A real, all-out program demands answers to the following questions:

1. Have you, as a medical director, acquainted yourself with every job in the plant?
2. Do you know the physical requirements of each job?
3. Are you aware that certain jobs can be performed very efficiently by men with definite physical defects?
4. Have you catalogued the jobs, and have you tabulated the type of physically disabled men who can do these jobs?
5. Have you listed the jobs into which cardiacs can well fit without causing further cardiac distress and not be a hazard on the job? (There are a lot of men suffering with cardiac conditions who are available and able to do a good day's work.)
6. Do you know the kind of work in your plant which women are able adequately to perform?
7. Have you noted the physical capabilities which each woman must have to do such a job?
8. Do you have a follow-up system to ascertain how the individual is getting on in a specific job?
9. Have you a close contact and an intimate understanding with each supervisor so that he will report freely the cases that are not doing so well?
10. Do you have the rule that when an employee is physically under par, he must be sent to the doctor? For every absent employee, there are probably two others who are partially ill and who are working, but at a decreased rate.
11. Do you have a regular system of adjusting the physically maladjusted?
12. Have you and your staff done an intelligent job of selling yourselves so that the employee is glad to come and see you even when he is only slightly ill?
13. Do you keep an adequate and complete record of all these visits, absences, advices, and examinations?
14. From these records, are you trying to find the general reasons for absences?
15. Have you formulated certain principles for causes of absenteeism and have you tried to work out a program to eliminate the causes?
16. Do you check regularly the employee who is absent frequently to ascertain the reason for his absence, and have you endeavored to make clear to the employee the things he must do so that he may keep his absences to a minimum?
17. Have you instituted a general education program based on the needs of your employees and the physical demands of your plant?
18. Have you studied the fatigue factor in the plant, and have you arrived at the proper answer?
19. Do you know of the nutritional status of your employees, and have you attempted to provide for nutritional deficiencies?
20. Have you instituted all the measures that are available to increase the resistance of the employees to respiratory diseases?
21. Do you have knowledge of the sanitary conditions of your plant, and do you supervise their correction?
22. Do you have a regular system of first aid treatment, and are all of these cases followed up?
23. Are injured workmen fitted into work that will continue them on a job which will not increase the injury or allow them to be hazardous to others?
24. Have you instituted a rehabilitation program that allows defective workmen to return to some kind of useful endeavor?
25. Have you made management aware of the fact that not all absence is due to illness?

THE doctor who includes in his armamentarium the affirmative answers to these questions is doing his bit to keep an efficient worker on the job every hour of the day and every working day of the year; such a doctor rates the title of industrial physician.

[NOTE: Following up his over-all analysis of absenteeism in general (page 281) DR. WITTMER'S supplemental comment, written especially for this issue, relates the problem definitely to the industrial physician.]

You may be a good diagnostician and an excellent therapeutist, but unless you have a proper conception of the basis for your examinations, diagnoses, etc., they may be worthless when evaluated for effectiveness.

Tennessee Institute for Nurses

THE first Industrial Hygiene Institute for Nurses to be held in Tennessee was offered at Peabody College Monday and Tuesday, April 19 and 20, under the general chairmanship of MISS AURELIA B. POTTS, director of the Division of Nursing Education, Peabody College. M. K. CROTHERS, M.D., medical director of Procter & Gamble Defense Corporation; RUTH KAHL, Bethesda, public health nursing consultant, U. S. Public Health Service; DORIS JOHNSON, public health nursing consultant, U. S. Public Health Service; CHARLOTTE SILVERMAN, M.D., associate medical director, Division of Research in Child Development, U. S. Department of Labor, Children's Bureau; NAN COX HARE, supervisor of nursing, Tennessee Valley Authority, Chattanooga; HELEN HOWELL, associate professor of public health nursing, Vanderbilt University; BEATRICE CLUTCH, associate professor of Nursing Education, Peabody College; AMY KELLOGG, industrial nurse Springfield Woolen Mills Co., Springfield, Tennessee; CHRISTINE B. TRIEBE, industrial nurse, Kingsport Press, Kingsport; ANNE WEBB, industrial nurse, Vultee Aircraft, Inc., Nashville; and LOUISE MINTON, Industrial Mills, Borden Mills, Inc., Kingsport, were some of the speakers on the program.

Lever House cafeteria, under the supervision of a dietitian; here Victory meals are served to employees

Industrial Health in Canada

—New Health Centre Opened at Lever House, Toronto, April 6, 1943—

DESIGNED to provide an extensive health service for employees, the new modern health centre of Lever Brothers, Ltd., at Toronto, Canada, was opened formally on April 6, 1943. The following persons participated in the opening ceremonies:

DR. FRANK GRIFFIN, Lever staff doctor;

MR. G. A. S. NAIRN, President of Lever Brothers, Ltd.

Reception and waiting room

MR. H. W. WEISS, Head of the Industrial Division of the Health League of Canada;

DR. AGNES WHITE, Lever staff doctor;

MISS A. B. POST, Lever head nurse;

MISS DORIS MCPHERSON, Lever staff nurse;

DR. J. G. CUNNINGHAM, Director of the Industrial Hygiene Division of the Department of Health, Toronto;

DR. GEORGE S. YOUNG;

DR. GORDON BATES, President, Health League of Canada;

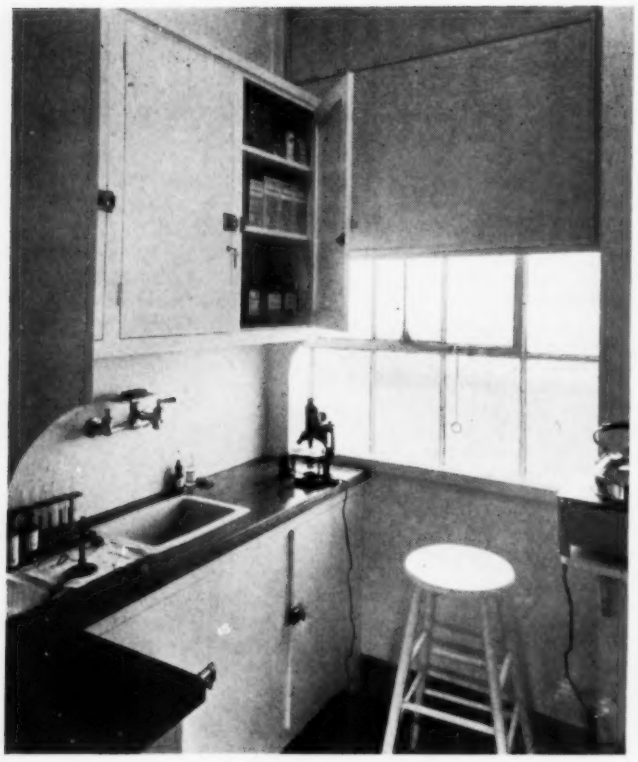
DR. W. H. CRUICKSHANK, Industrial Hygiene Division, Department of Health, Toronto;

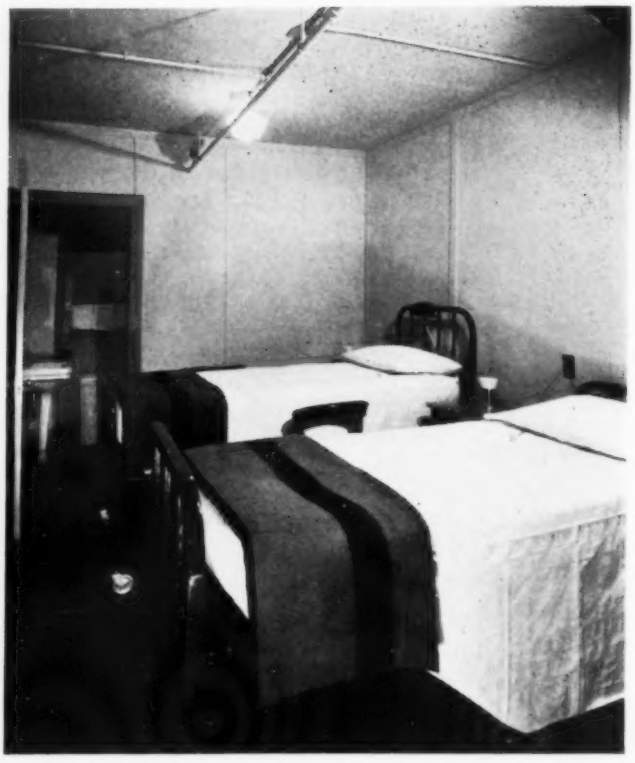
MR. J. R. PRAIN, Chief Inspector, Department of Labour, Province of Ontario;

DR. G. J. GAILBRAITH, Vice-President, Workmen's Compensation Board;

DR. C. O. SAPPINGTON, President, CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY, and Editor of INDUSTRIAL MEDICINE;

MR. GORDON CAMERON, Medical Aid Officer, Workmen's Compensation Board; and





(Left): Clinical laboratory. (Right): Men's ward. There are similar facilities for women

MR. WILLIS MacLACHLAN, Personnel Supervisor, Ontario Hydro-Electric Power Commission.

The service rendered in the new health centre reaches a new high in its enlightened approach to the problems of industrial medicine and the safeguarding and improvement of the employees' health. The em-

In the surgery at the formal opening on April 6, 1943, left to right: DR. FRANK GRIFFIN, Lever staff doctor; MR. G. A. S. NAIRN, President, Lever Brothers, Limited; MR. H. W. WEISS, Head of the Industrial Division of the Health League of Canada; DR. AGNES WHITE, Lever staff doctor; MISS DORIS McPHERSON, staff nurse; DR. J. G. CUNNINGHAM, Director of the Industrial Hygiene Division of the Department of Health; DR. GEORGE S. YOUNG; DR. GORDON BATES, President, Health League of Canada; DR. W. H. CRUICKSHANK, Industrial Hygiene Division, Department of Health; MR. J. R. PRAIN, Chief Inspector, Department of Labour, Province of Ontario; MISS A.B. POST, Lever head nurse; DR. D. J. GALBRAITH, Vice-President, Workmen's Compensation Board; DR. C. O. SAPPINGTON, President, Central States Society of Industrial Medicine and Surgery; MR. GORDON CAMERON, Medical Aid Officer, Workmen's Compensation Board; and MR. WILLIS MACLACHLAN, Personnel Supervisor, Ontario Hydro-Electric Power Commission.

ployed group totals approximately 1000, and the health centre has been characterized as one of the best equipped and staffed for its size on the continent. It is designed primarily for emergency surgery, and the diagnosis and prevention of serious disease through the treatment of minor symptoms. In this connection, MR. G. A. S. NAIRN, President of the company, stated that it is the policy of this group to encourage prompt reporting to the health centre, no matter how slight the indisposition may be; the dispensary rate has recently been doubled through this policy and it is believed, therefore, that it represents a close check on the minor ailments of the employees.

Staffed by two doctors, one a woman physician for female employees, and four graduate nurses,

Business office and record room

Dispensary and treatment room

the centre includes waiting and consulting rooms, examining room, surgery, laboratory, men's and women's wards. Open 24 hours a day, approximately 400 people avail themselves daily of the opportunity of advice and treatment, the majority with nothing more than a scratch, a sliver under the skin, or a sore throat. The employees are encouraged also to report for physical examinations, which are very thorough. Prevention is regarded as a better solution of the employee health problems than cure, and no ailment or injury is considered too trifling to receive courteous, prompt and efficient attention.

Interest in employees' health goes far beyond actual clinical treatment, emphasizing health supervision which is a postulate of preventive medicine in industry. Through staff doctors' recommendations, employees with minor injuries are temporarily transferred to a type of work which will not subject the injured part to strain or to an aggravation of the injury. Serious injuries are given emergency treatment and then sent directly to a hospital. Trained nurses visit the homes of all employees who are ill or convalescent, supervise them and see that they are receiving proper care, reporting the condition of patients and their progress.

A feature of the service is a new cafeteria where employees are served Victory lunches and dinners, nutritionally balanced, at low cost, designed to provide both proper nourishment and appetizing flavor. This phase of the work is under the direction of a capable dietician. A booklet entitled "Foods for Health," published by the Milk Foundation of Toronto and approved by the Committee on Publications of the

Examination and consultation room

Canadian Council on Nutrition and the Ontario Nutrition Committee, and containing the fundamentals of the adequate diet and the place of various foods in the menu, is distributed to employees. The policy of the company as enunciated by MR. NAIRN includes the provision of low cost meals at a price which employees can pay, and the operation of these facilities at no profit to the company. It is believed that the low priced meal, even at a loss to the company, is a practical way to solve one of the most important problems of industrial feeding.

ALL APPLICANTS for employment with the company undergo an obligatory medical examination which is done with great care; the percentage of rejections is normally very low. One reason for this is because the primary purpose of the initial examination is not to reject applicants below average in health, but to fit them to jobs well within the limits of their physical and mental capabilities. For example, a man unable to handle heavy weights can nevertheless give a good account of himself in a job requiring less physical exertion. The examination form and the history outline, which are here reproduced, have been found to give good results and to be adequate for this purpose.

Employees are constantly encouraged to join, through the company, the Ontario Hospital Association's recently inaugurated industrial "plan for hospital care."

Under this hospital plan, care in any hospital in Canada, with all expenses paid, is available to each member of the plan for as much as 21 days a year, and the Lever company contributes up to one-half of the employee's monthly membership dues. In connection with the hospital plan, provision is made for sick pay to be given to all Lever employees during absence on the rate of two weeks' at full pay for each completed year of service with the company, followed by one week of half pay for each completed year of service. This arrangement is valid and has apparently been successful notwithstanding the fact that in some cases which come under the Ontario Workmen's Compensation Act the provision has been made that the smaller payments offered by the Workmen's Compensation Board in lieu of wages are returned to the company. As an example of these

M F

LEVER BROTHERS LIMITED

PHYSICAL EXAMINATION

Age.....

Height.....

Weight.....

General Appearance and Body Type: Good ☐ Fair ☐ Poor ☐ Obese ☐ Thin ☐ Anaemic ☐ Thick-set ☐ Ruddy ☐

MENTALITY	GLANDS	NOSE	TONSILS
Bright	Thyroid	Hay Fever	Present
Average			Removed
Dull	Lymph	Sinusitis	Size

EYES

EYES	VISION	
Colour	Without Glasses	With Glasses
Reaction: Light	R. 20/	R. 20/
Distance	L. 20/	L. 20/

TEETH

TEETH	DENTURES
Upper	Upper
Lower	Lower

EARS

CONDITION	DRUMS	HEARING
R.	R.	R.
L.	L.	L.

CARDIOVASCULAR SYSTEM

P.M.I.	Varicose Veins	Vessels	Haemoglobin
Cm. in Interspace	R. L.		

Exercise Tolerance	BLOOD PRESSURE	RATE	HEART
G	Before exercise	Before exercise.....	Murmur
		½ min.....	
F		1 min.....	Transmission
	After exercise	2 min.....	
P		3 min.....	Rhythm

CHEST

MEASUREMENT	LUNGS	BREASTS
Insp.		
Exsp.		

ABDOMEN

Measurement	Description	Hernia
	Shape	
	Tender areas	
	Scars	

GENITO-URINARY

GENITAL ORGANS	URINALYSIS	WASS. OR LAUGHLAN
	Alb.	
	Sugar	
	Deposits	

SKIN	VACCINATION	T.B.	EXTREMITIES	REFLEXES	X-RAY
			Hands	K.J. R.	
			Feet	L.	

REMARKS:

Category	A	B	C	D
Type of Work	H.M.	M.H.M.	L.M.	O.

I certify that I made the above examination at

A.M.....

P.M.....

MEDICAL EXAMINER.....

LEGEND: Category: A—Good B—Fair C—Poor D—Remediable Defect.
Type of work: HM—Hard Man. MHM—Mod. Hard Man. LM—Light Man. O—Office.

plans, one employee seriously injured some time ago has had two years of full pay; another who has been absent because of sickness, and has had no compensation from the Board, has had 52 weeks of full pay.

Formerly the company had rather cramped quarters and inadequate equipment in what was designated as "first aid," but in inaugurating the new program of health supervision, it was believed that it would be better to call the new quarters a "health centre." This designation apparently expresses the object of the service and the facilities made available to all the employees, and it is an innovation in this respect, as well as in others.

The officials of Lever Brothers feel that the health centre and its services pay dividends both to employees and to the company in four tangible ways:

1. By assisting in the prevention of epidemics by the identification of communicable diseases in their inception and the use of control measures to prevent contagion.

2. By preventing potential infection and complications resulting from actual infection after injuries, through prompt medical treatment. The obvious fact that the health centre is a part of the company premises, easily accessible and available at no added charge to the employee, has resulted in numerous ailments being identified in their primary stages, and efficiently attended to at a time when treatment and control measures are of the most importance. It is believed that under ordinary circumstances where the worker must go outside for advice, treatment, re-dressings, and similar services, the serious complications have developed—when a greater amount of treatment is necessary, when also it is decidely less efficient, and when there is a greater amount of lost time.

3. By the decrease of labor turnover and the consequent decrease of training cost through the realization that certain jobs are suited to men and women of different degrees of physical and mental fitness. If men and women can do a job without overexerting themselve they are less apt to search for other employment, to become dissatisfied or feel that change of employment is advisable.

4. And finally, such facilities decrease the days lost through accidents and illness, as reflected in the record of low absenteeism.

The objectives and principles of the health centre, therefore, conform ideally with the axiom that prevention is better than cure.

M | F | LEVER BROTHERS LIMITED — MEDICAL HISTORY — NAME | Phone No. | Age

Racial Origin | Nationality | ADDRESS | Date

Date of Employment | M. ☐ S. ☐ D. ☐ Sep. ☐ W. ☐

CLINICAL HISTORY	Answer Yes or No	REMARKS
Have you ever suffered from, or consulted a Physician, Surgeon or any other Practioner for:—		
1. Fits, convulsions, nervous breakdown, mental breakdown, or any disease of the nervous system?		
2. Any disease of heart, including fainting spells, palpitation, high blood pressure, shortness of breath, pain in region of heart or chest, dropsy or varicose veins		
3. Any disease of the lungs including tuberculosis, asthma, bronchitis, pleurisy, pneumonia, spitting or raising of blood?		
4. Any disease of stomach, intestines, liver or gall bladder?		
5. Any disease of the kidneys or bladder, including kidney stone, stricture, diabetes or rising at night to urinate?		
6. Any disease of the skin, middle ear or eyes?		
7. Sinusitis, rheumatism, gout, neuritis, goitre, tumor, anaemia, syphilis, suppurating glands or any disease of bones or joints?		
8. Any surgical operation (tonsils or appendix)?		
Any disease other than listed?		
Any injury?		
9. Have you ever been in bed ten days at one time?		
10. Have you ever been under W.C.B.?		
11. Have you ever been turned down for Insurance or offered a policy at a higher premium?		
12. Have you ever been rejected or discharged from any of the Armed Forces?		
13. Are you subject to headaches, constipation, hay fever or indigestion?		
14. Have you ever been in a Hospital or Sanitorium?		
15. Are you subject to pain in the chest or abdomen?		
16. Have you been associated in any way with a case of tuberculosis during the past two years?		
17. Are you in receipt of a pension?		
18. Are you expecting any form of medical or surgical treatment?		
19. Are you now in first class health?		
20. Any abnormal menstrual or gynecological lesions?		
21. What are your habits regarding intoxicating liquors?		
22. Has any relative suffered from consumption or mental disease?		
23. Name of any Physician, Surgeon or other Practitioners you have consulted or been treated by during the last five years		

REMARKS:

FAMILY HISTORY	LIVING	DEAD			
	Health	Age at Death	Cause	Date	Length of Illness
FATHER					
MOTHER					
BROTHERS No. alive / No. dead					
SISTERS No. alive / No. dead					
HUSBAND OR WIFE					
CHILDREN					

I declare that the recorded answers to the questions asked in this application are full, complete and true.

Signed at ..... this ..... day ..... 19 .....

..... Signature of Witness

..... Signature of Applicant

Industrial Medicine in an Autobiography

Book Review by

C. O. SAPPINGTON, M.D., Dr. P.H.

EXPLORING THE DANGEROUS TRADES: The Autobiography of ALICE HAMILTON, M.D. Illustrated by Norah Hamilton, 427 pages. Boston; Little, Brown and Company; an Atlantic Monthly Press Book; price $3.00.

IN THE 32 years that DR. ALICE HAMILTON has been engaged in her outstanding work of ferreting out industrial hazards and giving recommendations for their control, it has been my privilege and pleasure to have known her during the latter two-thirds of this period, beginning in 1922 at the Harvard School of Public Health, when Dr. Frank Pedley, of Montreal, and I constituted her class in industrial toxicology. DR. HAMILTON had been appointed, as the only woman member on the faculty of either the Harvard Medical School or the Harvard School of Public Health, to take the chair in industrial toxicology, in 1919. Later I remember her as visiting the National Safety Council, when I was on that staff, seeking information with respect to the toxic possibilities of acrolein. In the early 30's a testimonial dinner was given for her at the Montreal meeting of the American Public Health Association, at which many of her former students and co-workers were present and congratulated her upon her great success; at about the same time also she gave a series of important lectures at the University of Illinois Medical School, which, although comparatively poorly attended, contained material of rich quality for those interested in this field.

ALICE HAMILTON may be rightly called the Dean of industrial toxicology in America. Pioneering as she did, there were great opportunities to study the pathological effects of the industrial environment on workers and to recommend control measures—the very bulwark of preventive industrial medicine of today. The early precedent of the physician studying actual plant conditions at close range may well have been one of her most notable contributions, as difficult as it is to say which one is greatest. Prominent among her researches were those relating to lead, including the processes of smelting, enameling and painting; explosives, organic solvents and other war materials; and most recently viscose rayon manufacturing.

"Exploring the Dangerous Trades" is a book which is easily readable, in narrative form, and contains the development not only of industrial toxicology in America but also the concurrent development of important social changes in industry. The whole life of the author is traced, beginning with the home surroundings, leading through her undergraduate days in medicine, during which she was associated with a number of famous men in medical annals, and on through her survey work, both in Illinois and with the Federal government, her trips to Europe, her experiences with the League of Nations and, finally, into her more quiet days at her home at Hadlyme, Connecticut.

Both labor and industry come in for some criticism as to their inability to see the necessity for the protection of workmen, this view being developed especially from the vantage point of the humanitarian; there is scarcely any reference to economic losses occasioned by bad practices. Contacts with political intrigue and preferment, although not numerous, figured prominently in her experiences; as contra-part an episode in Germany emphasizes her point of view with respect to the "healthy" state of our form of government in contrast with the dictatorial policy of European nations to regiment and have absolute power, whereas, as she told certain officials of the German government, we feel here in this country that opposition can be used as a check on governmental forms of influence.

When DR. HAMILTON went into her special line of work, women were few and far between either working in industry or having any interest in industry, particularly in medicine and hygiene. It must be to the author a most welcome change for the better, therefore, that women are now taking their places as industrial physicians, both as physicians to men and as physicians administering to the particular physiological problems of women employees. "It seemed natural and right that a woman should put the care of the producing workman ahead of the value of the thing he was producing; in a man it would have been thought sentimentality or radicalism." Moreover, as expressed by a plant manager, a woman could see the workmen as individuals, as so many fathers, husbands and brothers. It is most fortunate that these desirable changes have come to pass since DR. HAMILTON entered her field.

There can be no doubt that the early association of DR. HAMILTON with Jane Addams at Hull House where they both lived had a very strong influence on DR. HAMILTON'S attitudes and her humanitarian point of view and gave her an ever-consuming interest in social trends, both inside and outside of industry. This was as it should be, to produce the inimitable combination of a love for technical things and a no less sincere regard and respect for the considered rights of human beings.

With all of her contacts with the morbid things of life, the human misery she observed, the inertia and apparent stupidity she encountered, I have never known DR. HAMILTON to be pessimistic. Always there was that practical and considerate aspect to her surveys, her recommendations, and her treatment of individuals with whom she could so easily have been most impatient. This great courage and feeling of optimism pervade her recent point of view, with which the book closes: "It is this changed attitude toward the war which gives me hope for the peace. Not that I believe that we shall emerge from the long-drawn-out conflict with a spirit of sweet reasonableness. We shall surely have to pass through the stage of weary reaction against self-sacrifice, of longing to return to our own comfortable ways, that followed the last war, but I do not believe it will last for years as it did then. There has been too much soul-searching, too much deep probing into the causes of this war and into the ways we must take to prevent another. It will not be possible for us to draw back into our own shell, nor do I believe we shall wish to. Mankind does not of a sudden become sinless, but he knows little of history who thinks that our progress is downhill, not up. We do swing down sometimes but not as far as we swung the last time, and when we swing up again it is to go higher than we went before. I do not believe I shall live long enough to see that upswing, but I know it will come."

Industrial Hygiene and Medicine

Book Review by

C. O. SAPPINGTON, M.D., Dr. P.H.

MANUAL OF INDUSTRIAL HYGIENE and Medical Service in War Industries. Issued under the auspices of the Committee on Industrial Medicine of the Division of Medical Sciences of the National Research Council. Prepared by the Division of Industrial Hygiene, National Institute of Health, U. S. Public Health Service. Edited by WILLIAM M. GAFAFER, D.SC.—16 contributors, 508 pages. Published by W. B. Saunders Company, Philadelphia, 1943. Price $3.00.

THIS is an excellent volume, and, as the subject indicates, contains material which can be readily adapted to industrial hygiene and medical service practices, particularly in the war industries. There is a foreword by DR. C. D. SELBY, Chairman of the Committee on Industrial Medicine, National Research Council, and a preface by DR. J. G. TOWNSEND, Medical Director and Chief, Division of Industrial Hygiene, National Institute of Health, U. S. P.H.S.

The contents are divided into three parts: Part I—Organization and Operation of Facilities; Part II—Prevention and Control of Disease in Industry, which is divided into two sections; and Part III—The Manpower Problem.

Included under the Organization and Operation of Facilities are such subjects as Plant Medical Facilities; Organization of Plant Medical Department; Medical, Nursing and Dental Services; Organization of Plant Emergency Medical Service and Integration with that of the Community; and Available Services in Industrial Hygiene. In Part II, with reference to Prevention and Control of Disease in Industry, there are chapters on the Problem of Occupational Disease; Occupational Dermatoses; Engineering Control of Air Contamination of the Working Environment; Medical Control of Respiratory Diseases; and such varied subjects as Venereal Disease Control, Industrial Psychiatry, Health Education, Industrial Fatigue and

Nutrition in Industry. In Section II there are considered Community Sanitation, Plant Sanitation, Illumination, Noise and Radiant Energy, and Heating, Ventilation and Air Conditioning. Part III, on the Manpower Problem, includes the material in three chapters on the Maximum Use of Manpower, Women in Industry, and Absenteeism.

On the whole, the 24 chapters of the book, occupying 508 pages, are fairly well balanced. The contents of any book cannot be judged on the size of the chapters or the size of the book itself. The chapters vary in this book from one of six pages on Industrial Psychiatry to one of 69 pages on Engineering Control of Air Contamination of the Working Environment.

Among certain of the features which definitely should appeal to medical men and hygienists in industry is the discussion of the availablity of services through which help may be secured—this is thoroughly taken up in the chapter by MR. BLOOMFIELD, and should be of great assistance when a war plant needs help and does not know where to get it. Another feature of the book is the use of the bibliography at the end of each chapter, giving the exact references used in the text.

It would be impossible to write such a book as this without referring to certain basic information, in this category being included Dublin and Vane's "Occupational Hazards and Diagnostic Signs" Outline; the use of Brown's classification of Respirators; the outline of Recommended Minimum Standards of Illumination of Industrial Interiors by the American Standards Association Code for Industrial Lighting, as published by the Illuminating Engineering Society of New York, and Suggestions for Care of Women in Industry, as formulated by the Children's and Women's Bureau of the U. S. Department of Labor.

It was not intended by the authors, apparently, to include in this book the methods of sampling and analysis for the various types of air contaminants in industry—this would have been indeed a considerable job and probably not well adapted to a manual of this type. These have, however, been included in brief outline form as a supplement to the monthly periodical of the Division of Industrial Hygiene of the U. S. Public Health Service, which is entitled *Industrial Hygiene*.

This is a book which is very timely and should receive wide distribution; it should be particularly useful to physicians, hygienists, safety personnel and nurses in industrial medical and hygiene work. As a reference book, it will be invaluable to those who are doing this kind of work as a new venture.

A Six-Year Study of Arthritis Therapy

—With Special Reference to the Pharmacology, Toxicology and Therapeutics—

R. GARFIELD SNYDER, M.D., F.A.C.P.,
WILLARD H. SQUIRES, M.D., F.A.C.P.,
and
JOHN W. FORSTER, M.D.,
Arthritis Clinic, Hospital for Special Surgery, New York City

ERTRON was introduced into our clinic about six years ago by Dr. Kristian Hansson, Chief of the Physiotherapy Department at Cornell Medical Center and also the Physiotherapy Department of our hospital. He had observed beneficial results with this form of treatment in a few private patients and suggested that a clinical study of the therapeutic value and safety of this product be carried out in the Arthritis Clinic at the Hospital for Special Surgery.

In spite of the excellent results reported by several investigators who had studied Ertron, we were extremely skeptical of its value, since numerous reports had appeared in the literature describing the toxicity which often followed the use of other types of vitamin D. Subsequent research, however, changed our opinion very definitely in favor of this form of treatment.

The study of Ertron, conducted by us during the past six years may be divided into four phases.

I—Dosage

THE first two years were devoted primarily to the determination of (a) the minimum effective dosage, and (b) the maximum tolerated dose.

As a result of the first two years of experience, we became convinced that it was necessary to use at least 150,000 units of Ertron in order to obtain definite evidence of improvement in the average case of arthritis and that, in a majority of cases, 200,000 to 300,000 units per day were required to produce maximum benefit. In a few cases we used as much as 500,000 units, or even 600,000 units, a day for a week to 10 days without producing symptoms of intolerance, such as nausea, vomiting and frequency of urination. With this dosage we did not encounter any serious toxic symptoms. Mild symptoms of intolerance were easily controlled by temporary cessation of the drug for three or four days, with subsequent reduction of the daily dose to that tolerated by the particular patient.

II—Antiarthritic Effect

HAVING determined the safe therapeutic dose of Ertron, we then attempted to study the antiarthritic effect.

In order to accurately determine the therapeutic value of any agent for the treatment of arthritis, it is important to study, first, the immediate effect of the remedial agent in combating the arthritic symptoms; second, the effect of prolonged administration; third, how long the drug should be administered for optimum results; fourth, the results after cessation of the medication; and, fifth, in cases in which relapses occur, how much medication is necessary as a maintenance dose to keep the patient free from symptoms.

In order to determine the effect of Ertron in the treatment of chronic arthritis, we studied its effectiveness in 23 very resistant cases of long standing. This was a carefully controlled study in which the remedial agent was subjected to a much more rigid test than is ordinarily used in a treatment clinic. Arthritis is a chronic disease, the course of which is often very irregular with many periods of spontaneous exacerbation and remission. For this reason, each patient was studied either in our clinic or by other competent physicians for at least two years before being included in the research group. Only those patients who, during the pre-experimental period, had failed to respond to the most commonly used forms of therapy were accepted for the research series. Those patients who became progressively worse, in spite of previous treatment, were subjected to complete physical and laboratory examinations, after which they were given Ertron.

The beneficial results obtained with Ertron in this small series of resistant cases were definite evidence of its value in the management of arthritic patients.[1] While this study was in progress, several important questions arose: (1) Is Ertron safe in the doses used in the treatment of arthritis? (2) Can Ertron be administered safely for relatively long periods? (3) How long should Ertron be administered? (4) Are the beneficial results obtained with Ertron lasting, even after cessation of administration? (5) What is the mode of action of Ertron?

III—Safety

IN AN ATTEMPT to answer these questions, a much larger group of patients was studied more extensively. Many reports showed that with massive doses of other forms of vitamin D, there may occur renal damage, calcification of the blood vessels and impairment of function of the gall-bladder and liver. In order to determine whether Ertron would be equally deleterious in the doses used, we made a detailed study

Chart I—Clinical Data

Case No.	ex	ge	CHARACTERIZATION OF ARTHRITIS			COURSE BEFORE ERTRON THERAPY	PREVIOUS THERAPY	
			Duration	Classification	Extent of Involvement			Response
I B137	F	33	3 Yrs.	Rheumatoid	Hands, knees, feet and wrists	Rapidly progressive	Vaccine General, private doctors	None Temporary relief
II C239	F	40	4 Yrs.	Infectious	All joints involved including fingers, wrists, both knees and ankles	Gradually progressive	Iron injections, vaccines, physiotherapy, diet, gold	None
III H206	F	49	5 Yrs.	Rheumatoid	Both hands, wrists, feet and knees	Rapidly progressive	Sulphur baths, vaccines, medication	None
IV J45	M	47	18 Yrs.	Rheumatoid	Entire body involved: hands, wrists, shoulders, spine, knee, ankles (ankylosed knees, arms and right shoulder)	Gradually progressive. Patient unable to walk, (in wheelchair)	Paraffin baths, vaccines, physiotherapy	None
V K265	F	52	7 Yrs.	Rheumatoid	Entire body involved. Bedridden five months	Gradually spreading; bedridden five months	Vaccine, hospitalization	None
VI H177	F	44	20 Yrs.	Osteoarthritis	Pain in all joints of body, especially bad in both hands; progressive ankylosis	Progressive ankylosis. Hands progressively worse for past year	Hospitalized four years ago. Vaccine, diet	None
VII M296	F	39	3 Yrs.	Rheumatoid (R.G.S.) Infectious (W.)	Both shoulders, hands and knees	Progressive; moderate bilateral synovitis of knees	Physiotherapy	None
VIII C246	M	68	16 Yrs.	Rheumatoid	Hands, wrists, knees, hips, feet, ankles and metacarpal articulations	Slowly progressive throughout joints of body. Complicated by high uric acid, synovial changes, decalcification, subluxation and dislocation of bones	No record of previous therapy	Very little
IX L246	M	37	3 Yrs.	Marie-Strumpell	Ankylosis of spine	Progressively worse for three months prior to admission into clinic	Osteopathy, chiropractor	None
X B327	F	67	15 Yrs.	Rheumatoid (chronic)	Fingers, wrists, elbows, arms, hips, knees and ankles. Marked atrophy of muscles of arm and forearm	Spreading	Vaccines, hospitalization, private doctor	None
XI B139	M	37	2½ Yrs.	Rheumatoid (R.G.S.) Infectious (W.)	Involves spine, elbows, wrists, knees, shoulders; pain in all joints; marked synovitis in both knees	Rapidly progressive throughout body; resistant to treatment	Vaccine, bee venom, private doctor, physiotherapy, medication	None
XII J43	M	59	5 Yrs.	Rheumatoid	All joints involved; shoulders, elbows, wrists, fingers, knees, ankles and hands	Onset gradual; progress rapid	Vaccines, diet, physiotherapy, medication	Body pains improved but not hands and shoulders
XIII P87	F	48	7 Yrs.	Osteoarthritis	Severe pain in all joints of right leg; slight involvement of left leg; cannot bend knee; definite evidence of synovitis of right knee	Onset followed childbirth; progress slow until past two years, now rapid	Medication, vaccine, physiotherapy, hospitalization, visits to chiropractor, 24 sylvan electric baths	None
XIV T104	M	42	25 Yrs.	Marie-Strumpell	Pain in back of neck; stiffness in shoulders and knees	Gradually and steadily progressive. At 15, had rheumatic fever involving knees, ankles, heart and shoulders	Vaccine, diet, physiotherapy	None
XV R252	F	56	5 Yrs.	Osteoarthritis (R.G.S.) Rheumatoid (W.) Generalized osteoarthritis	Spread from knees into all joints	Progressive; slight degree of synovitis in right knee	Hospitalized, physiotherapy, medication	None
XVI T105	F	54	7 Yrs.	Rheumatoid	Wrists, hands, knees, fingers, ankles and feet	Slowly progressive throughout body	Hospitalized	None
XVII W190	F	60	5 Yrs.	Osteoarthritis, mixed (R.G.S.) Rheumatoid (W.)	Right shoulder, hands, knees and spine	Rapidly progressive throughout body	Hospitalized, vaccine (5 yrs. ago)	Moderate
XVIII Z47	F	40	9 Yrs.	Osteoarthritis	Spine, knees, hands—numbness of legs	Slowly progressive throughout body. Pain much more severe during past few months	Private doctors, medication, baths	Temporary
XIX S502	M	67	25 Yrs.	Gout or mixed type (R.G.S.) Gout (C.H.T.) Rheumatoid (L.C.W.)	Shoulders to fingers and from knees to feet	Progressive	Vaccines, private doctors, medication, physiotherapy	None
XX A110	M	59	6 Yrs. (R.G.S.) 3 Yrs. (L.C.W.)	Rheumatoid (L.C.W.) Osteoarthritis (W.H.S.) Mixed (R.G.S.)	Both shoulders, arms, hands, fingers and wrists	Progressive, especially for past six months	Private doctors, vaccine, physiotherapy	Temporary relief
XXI H202	M	57	3 Yrs.	Rheumatoid	Wrists, fingers, spine, knees, ankles and feet	Progressive; pain much more severe six months ago	Medication	None
XXII J32	M	42	3½ Yrs. (R.G.S.) 9 Yrs. (L.C.W.)	Osteoarthritis	Ankles, heels, knees (with spur formation requires a fusion). Unable to rise from sitting position	Gradually progressive	One complete course of gold sodium thiosulfate, complete course of apicosan	None
XXIII O36	F	28	10 Yrs.	Rheumatoid	Wrists, shoulders, knees, ankles, toes, fingers—all joints of body; synovitis in right knee	Progressively worse	Vaccine, private doctors, paramon and subenon, gold, physiotherapy, haliver oil. Exposure to sun increases stiffness	None
XXIV P162	F	43	6 Yrs.	Osteoarthritis	Left shoulder, right hand, hips, knees, feet, arms, neck and back	Gradually progressive	Private doctors, vaccines	None
XXV B288	M	54	10 Yrs.	Infectious with psoriasis	Right side of neck, right shoulder, both hands, knees and back. Well advanced case of psoriasis (both legs)	Progressive; became very painful and parts swollen in Sept., 1937. Pain and burning sensation in knees marked	Private doctors, medication, physiotherapy, two series of gold injections	None
XXVI B332	M	52	16 Yrs.	Gout—mixed (R.G.S.) Rheumatoid (L.C.W.)	From left big toe to ankles, right knee, wrists and fingers. Patient unable to work for past 5 yrs.; occasionally bedridden for 3 to 4 weeks	Gradually progressive, starting in left foot. Uric acid: 12.5	Private doctors, medication, vaccine, physiotherapy	Pain acute. No relief
XXVII B333	F	39	2 Yrs.	Rheumatoid	All joints of body, including wrists, fingers, elbows, ankles and knees. Pain started in fingers and spread throughout body	Progressive; great difficulty in walking, getting out of bed, getting in and out of chair. Cannot work	No former therapy	.....

Chart I—Clinical Data

Ertron Started Date	CLINICAL SUMMARY JANUARY, 1942	Ertron Stopped Date	INTERVAL HISTORY AND FOLLOW-UP APRIL, 1943
4-24-40	Last seen 7-1-41; no Ertron for eight months prior to this date; symptom-free	12-40	Sustained improvement Still without medication
5- 7-40	Moderate improvement clinically; gained nine pounds; general improved sense of well-being	Still on Ertron	Improvement was slow because patient was unable to tolerate necessary dosage orally—was nauseated. Ertron given parenterally since Dec. 9, 1942, resulting in more rapid improvement
5-29-40	At end of year, patient is much better than at onset of treatment. Left hand is a great deal better and left shoulder, knees and feet also greatly improved	Still on Ertron	Continued improvement; good results
6- 5-40	This was a very hopeless case; came to clinic in wheelchair. Had ankylosed knees, arms and shoulders. Now able to feed himself. After six months, developed a lot of indigestion; dosage irregular from then on	Still on small doses of Ertron	Partially blind wheelchair patient. Takes only 2 capsules of Ertron daily. In spite of very advanced stage, some beneficial reponse occurred
5- 8-40	Patient moderately improved; much more motion in fingers; able to walk much better	11-41	More motion in hands. Sustained improvement after cessation of Ertron
4-24-40	Patient moderately improved although no demonstrable changes in x-ray studies	Still on maintenance dose	Continued improvement. Result:—good
6-12-40	Back to work as waitress and apparently symptom-free. No medication in 4 mos. Patient greatly benefited by Ertron therapy	2-41	Working full time as waitress. Symptom-free. No medication
7- 3-40	Functional improvement although objective signs of hands are unchanged	11-41	Still symptom-free. No medication since November, 1941
6-12-40	Although no differences noticed in x-ray studies, patient is moderately improved and apparently can do usual amount of exercise, such as swimming, and cutting down trees, without any ill effects	12-42	Working nights, full-time, in defense plant. Symptom-free
5-22-40	Patient has apparently received a marked tonic effect from Ertron. Note: After 1½ mos., patient developed nausea and polydipsia. With doses over 50,000 units daily, nausea and anorexia occur	10-42	Transferred to other form of therapy. Patient had marked "tonic" effect from Ertron but could only tolerate one capsule daily(nausea)
5-22-40	Patient shows gain of 37½ pounds in weight and is markedly improved mentally and physically. Good results to date	Still on Ertron	Several relapses but continues to receive benefit from Ertron
5-22-40	Objective signs and x-ray studies show little change; however, patient is now able to ride five hours in bus; formerly unable to ride 15 minutes without tiring	8-42	Patient had to discontinue Ertron because of long distance to clinic
6-19-40	Clinically improved; enjoyed vacation; no Ertron necessary	4-41	Good results. Sustained improvement even after medication stopped. Gained 13 pounds
5-22-40	Can now play golf; improved signs of well-being. Patient feels arthritis definitely arrested with definite signs of improvement	Still on Ertron	Continues on two capsules daily; feels that he derives benefit from it. Result: excellent
5-22-40	Much more motion and less deformity in affected knee; less pain in fingers; general signs of well-being	Still on Ertron	Continues to improve
5-22-40	More motion and movement in fingers. Patient says, "feel 50% better"	Still on Ertron	No arthritic pains but numbness in arm
5-15-40	X-ray studies show less synovitis in left knee and less swelling of soft tissues of hand	12-41	Unable to contact this patient. Whereabouts unknown
5-22-40	Forty pounds overweight—basal metabolism: −20. Improvement intermittent. Weak feet may account for some pain in back	4-41	Follow-up shows no further improvement
8- 7-40	Necessary to wear bandage or right foot will become swollen. Feet the same until proper shoes obtained. Colchicine gr. 1/100 every 2 hrs. till nauseated (11 doses), had no effect. Patient says he" is considerably improved"	5-42	Working full-time in laundry. Results: good
6-12-40	Could not work because of inability to use hands. Now able to work as cutter		Working. Unable to come to clinic. Letter states he is feeling fine
6-19-40	No medication since 5-28-41. No complaints; "could almost run." Great improvement. No recurrence of symptoms	5-41	No complaints. Works everyday. No medication necessary. Results: excellent
6- 4-40	Patient great tennis player. First noticed pain in knees while playing. Patient claims he is feeling better and wishes to stay on Ertron therapy	6-41	No Ertron for nearly two years. Working full-time. Symptom-free
6-26-40	Complete recovery. Patient states when medication suspended there was slight recurrence of pain and swelling in fingers. This disappeared when dosage was resumed	7-42	Symptom-free. No medication necessary. Results: excellent
6-12-40	Less pain on movement of joints	11-41	Unable to contact patient
7-17-40	All involved joints somewhat improved. Working at present; follow-up impossible	4-41	Patient working; refused to report to clinic for follow-up
7-24-40	Patient claims that for the first time in 10 years he has not been laid up during winter months. Claims he has' 'really gotten some benefits from the Ertron treatment"	10-41	No medication for months. No serious recurrence
8- 7-40	Remarkable improvement. Patient is now back at work, nine hours a day. Completely free of pain	11-42	Working in defense plant. No symptoms. Weight: from 125 to 158½ lbs. Result: excellent

of these organs before, during and after the course of medication. Of the group of 200 cases, 75 patients were given special tests such as liver function, gallbladder visualization, gastric analyses, ophthalmologic examination of the retinal vessels, radiologic examination for renal or biliary calculi and for arteriosclerosis, and a special orthopedic examination to determine any changes in size, structure or function of the joints or skeletal parts.

In addition to these special tests, each patient had the following routine examinations at the beginning of treatment and at six-month intervals thereafter:

(a) Complete history and physical examination.

(b) Examination by the following specialists: dental, otolaryngologic, urologic, gynecologic, ophthalmologic, roentgenologic, orthopedic, neurologic and cardiovascular.

(c) Complete blood count and differential.

(d) Sedimentation rate.

(e) Wassermann.

(f) Blood chemistry, including: N.P.N., uric acid, sugar, calcium, phosphorus, phosphatase and total protein.

(g) Urinalysis.

(h) Motion pictures and still photographs.

(i) X-rays of involved joints.

As a result of this controlled study, we published the following conclusions:[2] "The medication used is a relatively non-toxic therapeutic agent. In our experience it has definite value as a method of treating chronic arthritis, especially the rheumatoid type.

2. Such signs of intolerance as did occasionally occur were easily controlled by either reducing the dose or by stopping the medication.

3. Demonstrable signs of improvement are improved sense of well-being, abolition of pain, diminution of soft tissue swelling, increased range of motion, restoration of normal function and increased resistance to fatigue.

4. The beneficial results obtained are usually sustained even after medication is stopped. In the great majority of cases if symptoms reappear they can, as a rule, be easily controlled by a second course of treatment or by placing the patient on a small maintenance dose.

5. The safety of this form of therapy has, we believe, been established. The various criteria for determining toxicity were studied. During the 12-month period of treatment, none of the following occurred:

Chart I—Clinical Data—Continued

Case No.	Sex	Age	CHARACTERIZATION OF ARTHRITIS			COURSE BEFORE ERTRON THERAPY	PREVIOUS THERAPY	
			Duration	Classification	Extent of Involvement			Response
XXVIII C312	F	59	12 Yrs.	Osteoarthritis, mixed. One finger suggestive of infectious	Fingers, hands, shoulders, knees and toes	Slowly progressive through right side of body	Private doctors, physiotherapy (baking), (baths), (massage)	None
XXIX M302	M	45	1 Yr.	Subdeltoid bursitis bilateral	Both shoulders, hands and fingers; (frozen shoulder—bilateral)	Rapidly progressive from shoulders to arms and hands	Osteopathy, physiotherapy, x-ray	None
XXX P118	F	45	3 Yrs.	Osteoarthritis (R.G.S.) Osteoarthritis complicated by malum coxae senilis —bilateral	Both hips, extending down to ankles	Progressive recurrently but more acute since 1936	Hospitalized (1934), physiotherapy, medication	Improved at times
XXXI R255	F	36	1 Yr.	Rheumatoid	Back, hands, knees, wrists, fingers, ankles and toes	Rapidly progressive. Pain started in right knee,—then spread	Chiropractor	Temporary (slight improvement)
XXXII L267	F	37	8 Yrs.	Rheumatoid	Shoulders, wrists, hands, knees, feet and fingers	Slowly spreading	Medication, vaccines, physiotherapy	Temporary relief
XXXIII M301	M	54	6 Yrs.	Rheumatoid	Hands, feet, hips, shoulders, elbows, spine, ankles—great difficulty in walking	Progressive; pain started in knuckles of hands. More severe in feet, hips and shoulders. Deformity of hands	Private doctors, vaccine, physiotherapy, diet	Temporary
XXXIV L263	M	57	2 Yrs.	Subdeltoid bursitis bilateral	Left shoulder. Patient fell from scaffold fracturing scapula, two ribs and injuring shoulder	Progressive; seven or eight months ago shoulder became worse. Uric acid: 5.2	Hospitalized	None
XXXV S479	M	44	3½ Yrs.	Rheumatoid	Hands, arms, knees and back	Progressive (very consistently)	Private doctors, vaccines, gold (stopped because of severe rash)	Considerable relief
XXXVI W194	F	39	15 Yrs.	Osteoarthritis, mixed	Spread from fingers through body, involving cervical region, elbows, wrists and fingers	Progressive; uric acid: 5.4	(Clinic) hospitalized, vaccines, physiotherapy, electric baths	Only temporary
XXXVII R254	F	63	20 Yrs.	Rheumatoid	Knees, elbows, spine, shoulders, ankles, hips, wrists and fingers	Rapidly progressive	Private doctors, gold (albumin appeared in urine)	Very little
XXXVIII F199	F	42	2 Yrs.	Rheumatoid	All toes and fingers; wrists and ankles; evidence of interphalangeal thickening of all joints	Rapidly progressive	Private doctors, medication, vaccine, diet, physiotherapy	None
XXXIX M207	M	50	8 Yrs.	Infectious (R.G.S.) Rheumatoid (L.C.W.). Chronic mixed arthritis (W.S.) (T.& C.L.) Atrophic with ankylosis	Fingers, feet, hands, wrists and knees. Has psoriasis all over body for past six months	Rapidly progressive	Hospitalized, medication, vaccine, physiotherapy	None
XL D140	F	65	2 Yrs.	Osteoarthritis	Left hip; tenderness over left sacroiliac joint; swelling of terminal joints of fingers	Progressive; hard to stoop in housework; patient cannot work well	Private doctors, physiotherapy, gold (developed rash)	None
XLI G314	F	57	9 Yrs.	Rheumatoid	Both shoulders, knees, elbows, hands and ankles. Last two months before admission, patient unable to work	Gradually progressive	Private doctors, medication, vaccine, diet	None
XLII S490	F	43	2 Yrs.	Rheumatoid	Both wrists and hands; definite evidence of synovitis knees, toes and ankles	Progressive; pain began in right leg, spreading to knuckles, toes and ankles	Private doctors, medication	None
XLIII S503	M	42	3 Yrs.	Rheumatoid	Wrists, hands and knees	Gradually progressive	Hospitalized, medication, vaccine	None
XLIV F227	F	46	4½ Yrs.	Rheumatoid	Both wrists, hands, right elbow, left knee, both ankles, neck. Patient bedridden four years; (left knee nearly ankylosed)	Progressive; pain started in right knee	Private doctors, vaccine, physiotherapy	None
XLV C232	M	33	12 Yrs.	Marie-Strumpell	Hips, both shoulders, (marked kyphosis)—spine, neck and knees. Has marked stoop	Progressive; severity greatly increased during past five years	Private doctors, medication, physiotherapy	None
XLVI T108	M	32	2 Yrs.	Rheumatoid(probably with infectional etiology)	Hands, elbows, knees, arms and fingers	Progressive; pain started in left knee. High uric acid	Private doctors, vaccine, diathermy	Occasional relief but then only temporary
XLVII S507	M	45	1½ Yrs.	No positive findings of rheumatoid. X-ray reports wrist has definite evidences of secondary osteoarthritis	Feet, hands, wrists. Psoriasis (not serious) on elbows and knuckles	Progressive; pain started in feet	Private doctors, vaccine, physiotherapy	Slight
XLVIII K258	F	36	11 Mos.	Rheumatoid	Fingers, wrists, toes, neck, ankles, knees (synovitis in both knees). In wheelchair; uses crutches occasionally	Progressive	At clinic. Aural sulfide(slight rash) 100% improvement at time but it did not last	Temporary
XLIX P167	M	23	3 Yrs.	Marie-Strumpell	Back (pain and stiffness); left groin (lameness); right knee	Progressive for past three years. Back became very painful one year ago	Private doctors, osteopathy	Slight
L P138	F	37	1½ Yrs.	Rheumatoid (not pure type)	Left and right hands, shoulders, elbows, knees, ankles and fingers	Progressive. Pain started in right shoulder	Private doctors, medication, Coley's vaccine, gold therapy (had results but not lasting)	Temporary

Chart I—Clinical Data—Continued

Ertron Started Date	CLINICAL SUMMARY JANUARY, 1942	Ertron Stopped Date	INTERVAL HISTORY AND FOLLOW-UP APRIL, 1943
7-31-40	Able to do ordinary housework. Moderate improvement. Patient believes treatment well worthwhile	Still on Ertron	Still taking Ertron. Continues to feel well. Result: good
7-31-40	Greatly improved with use of Ertron. Joints (shoulders) stretched under anesthesia	6-41	Working as special policeman. No complaints. No medication necessary. Result: excellent
7-17-40	Apparently her improvement is sustained only during very limited activity. Can now go up and down stairs and can walk farther	4-42	No further improvement
7-17-40	Patient shows very marked improvement with disappearance of swellings of fingers and complete restoration of function. Now pursuing her vocation as milliner. Patient claims she has improved 100 per cent	9-41	No medication necessary. No arthritic symptoms. Working as milliner. Result: excellent
7-31-40	Patient markedly improved. More motion in fingers. Medication stopped for over one month because of improvement; then reinstated—more improvement	2-42	Unchanged since summary of January, 1942
8- 7-40	Patient states there is more motion in hip. Able to walk up flight of stairs	7-42	Because he was able to tolerate only one capsule daily, and then with discomfort, an organic lesion of stomach or duodenum was suspected. Subsequent x-ray revealed duodenal ulcer. After ulcer therapy was instituted, patient was able to tolerate four capsules of Ertron daily. Surgery advised for hip condition
5-22-40	Patient was benefited by use of Ertron. More motion and less pain in shoulders	9-40 Resumed 1-42	Continues to receive relief from Ertron. Results: good
5-22-40	Vastly improved. Improved signs of well-being. Now working full-time as garage foreman (6-41). Patient now developing an edema of lower limbs which may be due to latent gold effect. Patient claims he is 75% better as to actions and feelings	Still on Ertron Stopped 11-42; resumed 1-43	Patient has had occasional slight relapses during past year when Ertron suspended but received relief upon resumption of medication. Results: good
7-24-40	(2-11-40) Two teeth removed; found non-hemolytic strep.; (2-19-41) Given Bezon; improved general condition. Arthritic pains continue; unable to take full dose because of nausea. Menopausal symptoms require hormonal therapy	2-41	Unable to contact patient by social service
6-26-40	Patient went to Tucson, Arizona. Not on Ertron for some time. Excellent moving pictures of this case showing marked improvement at end of six months		Unable to follow-up. Patient in Arizona
3-12-40	After six months of treatment, fingers not improved. Transferred to gold therapy. Later, became pregnant. No improvement during pregnancy. Patient seen recently—arthritic condition about the same	9-40	Transferred to other therapy; not helped
6-12-40	Psoriasis and arthritic condition unchanged	11-40	Transferred to other forms of therapy; not helped
8-28-40	Condition of left hip the same	1-42	Patient had hemiplegia. "Feel fine except for a little stiffness in hip"
9- 4-40	Greatly improved; has gained weight. General improvement. Less pain. Away all summer working as housekeeper		Sustained improvement. No medication necessary. Result: good
9- 3-40	Can crochet for first time in months. Patient has had her ups and downs but, generally, does not show improvement	8-41	No response to follow-up
8-21-40	No report on this patient other than letters. Went to work out of city for full-time. Last letter very cheerful. Greatly improved. Good systemic improvement and locally as to joints		Working full-time as shipbuilder. No symptoms; no medication necessary. Result: excellent
9-18-40	Very much improved not only in joint condition but also in general systemic condition. Patient bedridden four years	12-42	Patient discontinued Ertron for six months, with recurrence of symptoms. On renewal of Ertron, again improved. Lives in Connecticut; unable to attend Clinic due to gas rationing
10- 2-40	Less pain in hips and neck. Good general improvement. Patient given low-purine diet—responded well. Improvement more in general physical aspect than in range of motion	Still on Ertron	Feels better. No pain. Still taking six capsules of Ertron daily. Result: good
10- 9-40	Came to Clinic with very high uric acid which did not respond to colchicine cincophen or low-purine diet; did respond to Ertron; gradually decreased. Good use of left elbow. Working as foreman in factory. Greatly improved in every respect	1-43	Sustained improvement. No Ertron for three months
9-27-40	Patient's improvement mainly subjective. No visible or definite x-ray evidence of arthritis. Feet used to swell so that he could not wear shoes and work—this has disappeared. Complains of no pain and very little stiffness—"100% better"	Still on Ertron	Working in police department. Feeling fine
9-25-40	Now able to walk; previously, used crutches or was in wheelchair; improved systemic condition. Recovery in all joints formerly affected. General improvement in spite of one recurrence	Still on Ertron	Patient had recurrence of symptoms. Resumed treatment
11- 6-40	Definitely improved; gained weight. No pain or stiffness after moderate exercise. Never purchased brace as advised	Still on Ertron	Working ten hours a day. Feels fine. On maintenance dose of Ertron. No pain. Net gain in weight: 10 pounds. Result: good
10-16-40	Can now eat starches without their having bad effects. Marked general improvement in all affected joints. Patient claims she is 80 per cent better on this treatment	Still on Ertron	Continues to improve. Result: good

(a) No increased calcification of blood vessels was observed, either roentgenologically or by ophthalmological examination of retinal vessels.

(b) Renal function was not impaired, as shown by repeated chemical and microscopic urinalyses and by the N.P.N. remaining normal.

(c) Gall-bladder function was not impaired. Evidence is presented to suggest some improvement of impaired gall-bladder function occasionally taking place.

(d) Liver function tests furnished information which suggests the possibility that with the general systemic improvement, there may occur improvement in liver function.

6. There is no causal relationship between an occasional elevation of blood calcium and vitamin D toxicity.

7. Repeated chemical and microscopic examination of the blood revealed the lack of correlation between any changes in the blood constituents and the severity or progress of the arthritic process.

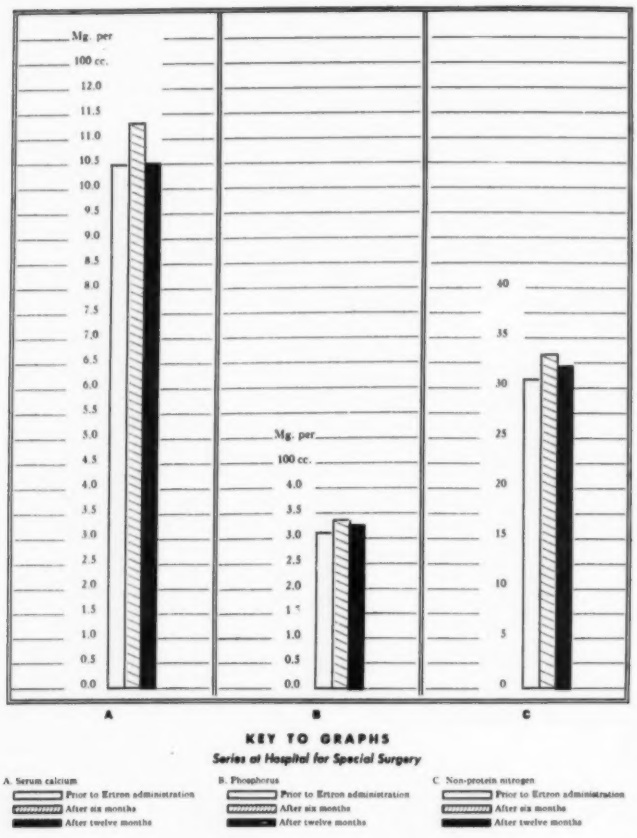
8. Definite functional improvement often occurred, irrespective of lack of radiological changes in the bones.

9. The earliest and most consistent beneficial effect observed was what is usually referred to as 'tonic effect.' The improved sense of well-being was accompanied by increase in weight in the thin, asthenic individuals."

IV—Sustained Improvement

HAVING shown that Ertron therapy is safe, that it can be continued for a long period without any harmful effects and that it has definite value as a method of treating chronic arthritis, it was essential to determine (1) whether the beneficial results observed were sustained after cessation of the medication, (2) if relapses did occur, would they respond to administration of Ertron, (3) what dosage of Ertron would be necessary to treat effectively such cases, and (4) would the continuous administration of a maintenance dose be necessary to keep the patient symptom-free. With this in mind, an attempt was made to study periodically, up to the present time, the 73 patients who constituted the two research groups. A few of the patients who were symptom-free and were working failed to come in for periodic examinations but described their condition by letter.

Chart I describes the clinical data reported originally, together



with the clinical observations on each patient up to the present time. The beneficial results observed during the first year were sustained in the great majority of cases.

In a paper read before the American Rheumatism Association,[3] we reported the results obtained in our clinic in this series of 200 arthritis patients treated with Ertron. Included in this report were the original 23 cases and the second series of 50 cases, the preliminary findings of which had been reported previously.[1, 2, 4] In addition to this series, we have studied an additional group of 50 resistant cases. The same general procedure was followed as in the previous investigations. A very careful analysis of the results furnished additional evidence, which corroborated our original reported findings. Since no new information was obtained in this last group, details of the investigation will not be included in this report.

It is of special interest to note the results of the blood studies. As previously reported, there was no consistent change in any of the cellular or chemical constituents of the blood during the course of Ertron therapy. In a few cases an increase in the level of blood calcium occurred, but this disappeared promptly upon temporarily withholding the drug, or reducing the dose. In many cases, after the return of the blood calcium to normal level, the maximum dose could be given without any further occurrence of hypercalcemia. This is in absolute accord with our previously reported findings.[1, 2, 4]

Chart II depicts the averages of blood calcium, phosphorus and N.P.N. in this group of patients before medication was started and at six and 12-month intervals after institution of therapy.

As a result of these studies, the following observations were made:

1. Many of the patients remained symptom-free, without any recurrences even after complete cessation of the drug.

2. Some patients who returned too early to full-time occupations had an occasional return of symptoms after cessation of the drug. These recurrences, however, responded rapidly to a renewal of the Ertron.

3. A few patients continued to take relatively small doses of Ertron (one to three capsules daily) for its "tonic effect," even after all symptoms had disappeared. They claimed that they "felt better" while taking the medication.

Comparative Study of Various Types of Vitamin D

DURING the past six years, we have limited our clinical investigation on the use of massive doses of vitamin D in the treatment of arthritis to one specific preparation, namely, Ertron. This is an electrically activated heat-vaporized ergosterol, prepared by the Whittier Process. As Reynolds has recently pointed out, this differs in both therapeutic value and safety from other forms of vitamin D.[5] We feel, therefore, that it is important to emphasize that the results herein reported apply only to the use of this one preparation and should not be misconstrued as referring to all forms of vitamin D.

For this reason, we are conducting another clinical investigation in which the effect of ultraviolet-irradiated ergosterol in the treatment of chronic arthritis is being determined. This research has been in progress for about one year and the results obtained will be reported in the near future.

Ertron, Parenterally Administered

FURTHERMORE, since it has been repeatedly demonstrated[6,7,8] that more than 70% of the cases of chronic arthritis, especially of the rheumatoid type, have a disturbed liver and gall-bladder function, impairment of secretion of the gastric hydrochloric acid and disturbed gastro-intestinal function, we felt that some of the reported failures with orally administered medication may have been due to faulty absorption of the drug. For this reason, during the past year we have been studying the effects of Ertron when administered parenterally.

The detailed findings of this investigation are being tabulated and prepared for publication.

Summary

IN A CERTAIN proportion of severe cases of arthritis, which previously resisted the more commonly used forms of treatment over a period of two or more years, the use of Ertron brought about a very satisfactory remission of their symptoms. The earliest response was an improvement in the patient's general condition. The patient looked better, felt better and his appetite was improved. Later, the swelling of the soft tissues was diminished or disappeared, there was increased range of motion and more normal functional activity with much less or no pain.

2. The improvement in these cases came about gradually. Although some patients showed evidence of improvement in about one month, in most cases it required from two to three months of the maximum doses of medication tolerated by that individual before the first evidence of improvement occurred.

3. The improvement was sustained in the majority of cases, but in some patients who returned too early to their former occupations, it was necessary from time to time to renew medication in moderate doses to keep them free from symptoms. In a few cases it was found that in order to keep patients free from symptoms, it was necessary to keep the patient on small maintenance doses.

4. As a result of this investigation on the use of Ertron over a period of six years, we are convinced that Ertron is a safe form of therapy. We have never seen any evidence of serious toxicity as a result of the use of this form of treatment.

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Food for Production

QUINDARA OLIVER DODGE,
Associate Professor, Institutional Management, Simmons College and Director, Vocational Training Department, Women's Educational and Industrial Union Boston, Massachusetts

MONDAY, March 29,—the beginning of rationing of all meats, cheese, fats, and canned fish—marked the day when the people of the United States began to be more vividly aware of what the coming food shortages throughout the world mean to all of us as the days lengthen into months, perhaps into years, before the war is won. And with this awareness must also come to each and every one of us an appreciation of both the need and the vital urgency for practicing sound nutritional health rules in order better to utilize the food that is available for fair division among ourselves, and so that more foodstuffs may be saved to share with the peoples of our United Nations.

Herbert Hoover[1] in a recent article, "We'll Have to Feed the World Again," predicts, on the basis of his experience in feeding the devastated countries of the last world war, that the area of famine will be greater and the need for aid more intense, and estimates that over 500 million people will be suffering from some degree of food shortage after this war, and that some European countries — Norway, Holland, Belgium, France, Greece, Poland, Yugoslavia and the Baltic States—will be much worse off than last time. He believes that in order to be prepared to fight these famines and their inevitable companion of pestilence, we shall need to have great preparedness in supplies and to lay some foundations of organization in advance.

Mr. Hoover's ably presented picture of an impending food shortage may develop a state of helplessness and despair in some people. To others it brings a vivid sense of personal responsibility not only to produce more food but also wisely to consume the food needed to facilitate the highest degree of health possible. Heretofore, in furthering the National Nutrition Program, we have been striving to insure optimal health for everyone, but for the duration it means emphasis on health compatible with available food supplies. Fortunately such an awareness and sense of personal responsibility toward bettering the food picture of the world brings a sense of gratitude that the relatively new science of nutrition has reached such a point in its development that the facts now known, if wisely interpreted and applied, can do much to make the maximum utilization of available foodstuffs an established fact. For, as T. Swann Harding, Office of Information, U. S. Department of Agriculture, prophetically writes in "Food Planning in a Wartime Economy:"[2] "The idea of food rationing is not to pool commodities and gradually enrich the diet. It is to see that each individual gets the food he or she requires and not a bit more. Certain classes, like those in the armed forces, may even get palatable food, but as for the rest of us it is a question of the most economical health maintenance possible."

Today many people know the simple fundamental rules of nutrition. Hardly a day passes but varying aspects of it may be read in newspapers, in magazines, or heard over the radio, or seen on bulletin boards, posters, or advertisements. The impetus the National Nutrition Program has attained in the two short years of its life since June, 1941, and the number of powerful and influential groups and associations that are back of this program today are nothing short of phenomenal.

Yet in industry we have but begun to scratch the surface in assuming responsibility for improving the nutritional health of our workers. We are well aware that it is only when the individual man *wants* to eat right, no matter how much he understands the *need* to eat right, that we may hope for optimal health for each and every one of our employees. Optimal health and the resultant increased morale that would follow this desire of the individual worker if translated into action should bring increased production of war goods in our plants. We are quite wisely and selfishly interested in increased production in all our plants today because increased production helps to insure a shorter war. With increasing manpower shortage and development of additional tight labor market areas, efficiency and maximum output per man or woman help to bridge the gap this lack of manpower could make in attainment of the total production goal set by the government in all essential war goods for 1943.

Nutrition's Place in Maximum War Output

DR. RUSSELL M. WILDER,[3] of the Mayo Clinic, Rochester, Minnesota, and head of the Consumers Program Branch, Department of Agriculture, has presented an excellent review of the literature to show evidence that many persons are ill fed and that ill feeding can affect the prosecution of the war. There is evidence that poor nutritional feeding that results in the lack of essential nutrients may be revealed by symptoms such as neurasthenia, marked fatigability, lack of emotional stability, or impairment of mental and physical efficiency. Psychologically we know these represent physical and mental conditions which make it difficult to secure high individual or group morale. It is said that Dr. Wilder's new division will study nutrition needs of the people, balance these against available foodstuffs, and recommend nutrition programs.

Malnutrition,[4] shown by Dr. H. K. Stiebeling's survey to exist for 45 million people in this country, represents an appalling loss of potential man-hours of labor. On the industrial front it behooves us constantly to remember that malnutrition is no respecter of persons and is not limited to members of low-income families. We are turning out goods today in a strong "labor-market" characterized by severe management strain, so top management as well as the worker is vitally concerned with opportunities to attain optimal nutritional health.

Although nutrition is not the only factor essential to the health of the worker, it is a very important factor. Food builds our bodies and gives us energy

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for everything we do. For this reason, an adequate diet is a "must" in the essentials for the attainment of optimal health. To attain an adequate diet it is necessary to apply the newer knowledge of nutrition to the daily selection of food. Evidence indicates it is highly improbable that an adequate diet will be obtained if we depend alone upon our likes and dislikes of food to insure it. It is, therefore, desirable to establish a public opinion which will demand well-balanced meals prepared in a way that conserves the nutritional value of food, just as the public has come to demand that food shall be prepared in a sanitary manner and served under pleasing, sanitary circumstances.

Recent surveys have shown breakfast and luncheon to be most frequently nutritionally inadequate for the industrial worker, with a resultant adverse influence on total production output. The excess consumption of tonics and candy bars at mid-meal rest periods also has been found to have a deleterious effect on the health of the worker and therefore on production.

Breakfast, Lunch, and Mid-Meal Feeding

AN APPRECIATION of the need for our concern in these food habits of so great a mass of our people can be best secured if we consider the scientific evidence that supports the belief that poor food habits are one of the causes of sub-normal nutritional health.

At the Symposium on Nutrition in Industry, at the recent Annual Congress on Industrial Health, in which Drs. Russell M. Wilder, L. B. Pett, George R. Cowgill, Robert S. Goodhart and L. D. Bristol participated, the needs of the war worker for nutritionally adequate breakfasts, lunches, and mid-meal feedings were ably discussed. You may already have read their detailed considerations in *J.A.M.A.*, March 13. During the discussion Dr. Wilder[5] stated that he believed a tendency to develop low blood sugars between meals may be stimulated by eating high carbohydrate meals. It is well known that the reduction of the blood sugar level to 0.07 or 0.05% may produce symptoms of hypoglycemia in which an increased supply of insulin to the body results in feelings of nervousness, uneasiness, tremulousness, weakness and excessive hunger. This disease, caused by minute tumors in the islands of Langerhans in the pancreas, is relatively rare, but Dr. Wilder believes that for every patient with the disease there are hundreds of patients who periodically have low blood sugars that are functional in origin.

At the Mayo Clinic they have discovered, in Dr. Wilder's words, "The best way to treat persons who have this tendency to low blood sugars between meals is to take them off a high carbohydrate diet and put them on a high protein, high fat diet with rather considerable restriction of carbohydrate and particularly with restriction of sugar." Then he goes on to say that "one of the reasons in my opinion why we are seeing more of this type of weakness in people occurring at 11:00 in the morning and at 4:00 in the afternoon and leading up to wanting something sweet to eat at those times is that the American people have gotten out of the habit of eating a good breakfast and a good lunch." His discussion of the physiological conditions that may result from an inadequate breakfast or lunch shows why he considers no breakfast or a breakfast of fruit, toast, jam, and coffee unsuitable for the industrial worker. Furthermore he believes "whenever you skimp on one meal you have to depend on the other meals to provide you with the vitamins and the other nutrients that are required for a balanced diet and, as many people not only skimp on their breakfasts but also on their lunches, this throws the whole burden of taking care of the nutrition on the one evening meal, and unless you choose the evening meal with greater wisdom than most people possess, you are among those who are in this borderline of nutritional deficiency." Therefore, he believes both breakfast and lunch should contribute their equal share of the various nutrients required for the day's nutrition. He recommends an adequate breakfast as consisting of fruit juice, whole grain cereal, bread or lightly toasted bread, butter, or enriched oleomargarine, egg, milk, cafe au lait, or coffee with milk or cream. Then, if you also want jam for your toast or sugar in your coffee, that is all right.

Wilder's conclusions about the cause of mid-meal fatigue are substantiated by the research of Haggard and Greenberg,[6] which shows that in the normal man, there is a correlation between muscular efficiency and fatigue and the concentration of the sugar in the blood. Also significant is the fact that they found the rise in blood sugar occurring after each intake of food persisted much longer after the first meal (three hours) than the second meal (two hours) and persisted still less after the third (one hour). They emphasize that the food selected for supplementary feeding between meals should be chosen with the same care for a balanced diet as the food of the regular meals, and that it be subtracted from that eaten at the three usual meals. They also found that at least one ounce of carbohydrate was necessary in the supplementary mid-meal feeding to produce the desired increase in efficiency.

Establishing a Sound Nutritional Program

THERE appear to be three needs in Massachusetts industry that must be met if nutritional efficiency for workers and management is to be attained. First, the need to establish sound nutritional procedures in the everyday practices of the plant cafeteria, and also in the practices of mobile or stationary shop canteens. Second, the need to provide, wherever possible, regular meals as well as mid-meal service for workers in plants heretofore without food service. Third, the need for nutrition education of the workers so that they will not only want to eat nutritionally adequate meals but will also demand them in the plant and in the home. The first two needs have had the feeding problem aggravated in the plant by the mushroom growth in physical plant area and personnel during this past year owing to large war orders—just as strain, fatigue, accidents and occupational ill health have been aggravated for the worker and for management by the pressure resulting from waging total war. There are recognized authorities who believe that the only effective way to instigate a well-rounded program of improved nutritional health for the industrial worker is to begin the program with management itself, so that it may be shown through improved personal health and vigor of the executives that advantages would accrue to the worker. The situation would then be ripe to demonstrate the increased production output that could be expected to follow the improved nutritional health of the worker. It should be pointed out here that whether the complete nutrition program is initiated with the worker or with management its success is dependent in the final analysis upon the employment of a qualified dietitian to whom adequate administrative responsibility has been delegated. With the increasing scarcity of available food supplies it will become more and more essential to have a nutrition department headed by a dietitian who possesses the requisite administrative capacity and ability to control costs, and who knows nutritional food values and their effect when utilized by the body.

The Plant Cafeteria

A CAFETERIA that is plant-owned and operated lends itself more readily to the initiation of a sound nutritional health program than does the cafeteria that is concessionaire operated. The plant management, if only from the purely selfish standpoint that health pays dividends, operates the cafeteria with the good of the worker primarily in mind, so that, except in unusual situations, the financial policy is one of just meeting expenses. The concessionaire operates a plant cafeteria as a business and rightly expects to make a profit.

Even though this is true with respect to plant versus concessionaire-operated cafeterias, there may be situations where exigencies of management seem to make the concessionaire-operated cafeteria an intelligent answer. In such situations, management in the future will more and more accept responsibility for the nutritional adequacy of the meals that are provided the employees by the concessionaire.

The two points at which control should be reserved by management at the time of award of contract to the concessionaire are two: First, the stipulation that complete meal combinations be provided to contain at least one-third of the day's nutritive requirements as served to the employee. This stipulation would necessitate the planning of nutritionally adequate meals, as well as the control of production and service methods to insure the retention of nutritive essentials in the foods as they would be served to the employee. Second, it is equally desirable that only those foods shall be available for sale at mid-meal service periods that will adequately supplement regular meal time choices in providing the day's nutritive requirements. In accordance with Dr. Wilder's statements and substantiated by the results of studies reported by Haggard and Greenberg,[7] this would mean a definite limitation of the sales of carbonated beverages and of candy at mid-meal service periods.

The cafeteria is the most important single means available for readily improving the nutritional health of the worker. The menu should offer a limited but interesting variety of complete meal combinations planned to provide at least a third of the day's essential nutrients for an adequate diet, and should permit a reasonable choice by the worker. These nutritionally adequate and popular meal combinations should be priced to meet the sum the worker has to spend for food. The average check in a number of cafeterias visited would indicate that the complete meal should be priced from 25 to 40 cents.

Milk should also be sold in half-pint cartons at cost or slightly below in order, to compete on a price basis with tonic or other beverages of less nutritional value. The worker should know that his nickel for a bottle of tonic bought 82 calories only, while his nickel for a half-pint bottle of milk bought 175 calories, or more than twice as many calories, as well as appreciable amounts of good quality protein, calcium, iron and vitamins B_1, B_2 and C, so that in time more and more employees would voluntarily select milk more frequently as giving them greater return on the money spent. This in fact proved to be the case in the company-operated cafeteria of the Aetna Life Insurance Co., in Hartford, Connecticut, where milk sales increased markedly when half-pints of certified pasteurized milk were sold at cost for 5 cents.

Complete meals at these low prices represent unusual values, and changes in choice of vegetables or other items on the combination should not be permitted, because exercise of choice slows up the line and, even more important, because a substitution of one item for another may adversely affect the food value as well as the food cost percentage for the day.

Improved nutritional value in the meal selected by the worker can be guaranteed first of all in the menu planned. This can be followed by pricing at least one nutritionally adequate menu combination with a price advantage for the worker. In addition, the location or sequence of nutritionally adequate combinations on the menu board with terminology calculated to invite selection and with food displays carefully merchandised can all be used effectively to influence the worker's choice in favor of the lunch high in nutritive value. Milk products, tomatoes, citrus fruits, and the green leafy or yellow vegetables—the protective foods—should be emphasized in complete meal combinations because of their many-sided contributions, including unusual quantities of calcium, vitamin A and vitamin C.

A judicious use of eggs, meats, and other vegetables and fruits increased beyond minimal quantities gives the diet greater psychological appeal as well as physiological value. The flavorful sugars and carbohydrate foods are important as inexpensive sources of calories, but they should not displace nutritionally indispensable protective foods which safeguard diets by furnishing minerals, vitamins and protein of high quality.

Cheap sources of calories needed by persons doing exceptionally heavy work can be provided to meet the appetite by using potatoes, dried beans and peas, breads, cereals, fats or sugars, once the minimal quantities of protective foods required for an adequate diet have been consumed.

Food selection, preparation and service are three points at which the nutritional food value may be affected adversely, even though the meal as planned may have been adequate.

Nutrition control of the final product as eaten by the employee starts with the selection of the variety and quality of product purchased. For example, some kinds of tomatoes give twice as much vitamin A and C as others. In grading food products, no longer should color, size, shape or weight be the sole guide to grade or value; the nutritive value should also be counted.

There is a loss of thiamine, riboflavin and niacin when meat, fish and fowl are cooked, directly related to the different methods used, i.e., roasting, broiling, braising or cooking in water. The method of preparation, cooking, and service can also affect adversely the retention of water soluble vitamins and minerals in fruits and vegetables if not carefully controlled. Food preparation and service control methods must apply the fundamentals of both food and nutritional research to insure a delicious tasting product with high food value. Dr. Robert Goodhart,[8] in *J.A.M.A.*, January 9, reports a cooking loss of 92% thiamine content and 82% vitamin C content of the fresh raw food from the "daily special," as served by an industrial cafeteria to employees of a war industry in the New York area. In general it can be said that food should be prepared, cooked and served as closely as possible to the time it is to be eaten.

Mid-meal supplementary feedings can be made an important adjunct to the nutrition program in educating the employee, while also reducing fatigue and improving morale. Haggard and Greenberg[9] have shown the value—from highest to lowest in the sequence stated—of pineapple juice, orange juice, grapefruit juice, and tomato juice in relieving fatigue when used for mid-meal feeding, with a resultant increase in muscular efficiency and rise in production. Milk with fruit is equally valuable if facilities in the plant make it practical to serve. Three breaks for refreshment during the day were also shown to send employees off duty with less fatigue than was the case with noon

meal only. This bears remembering in the light of the long distance many employees have to drive or ride to work each day because of inadequate housing facilities near the plant.

The Dietitian in Industry

THE successful operation of a plant cafeteria, both from the financial and nutritional standpoints, with its large quantity food preparation and service problems is dependent upon the intelligent application of the fundamentals of the sciences of foods, nutrition, and institutional management. Institional management, the application of the principles of scientific management to large group feeding, is the tool by which the sciences of foods and nutrition are applied.

The importance of dietitians in the Army, in hospitals, in large school cafeteria systems, in college dining halls and residence halls, is well recognized, but the opportunity for the dietitian to prove her value in industry has been limited. In the past when the profession was young—our newer knowledge of nutrition is only about 25 years old—there have been failures in attempts to use dietitians in industry. These failures have influenced the opinions of managements and industrial physicians long after the conditions that caused them were overcome.

The production of inferior products in a plant can only be reduced when the fault has been located and processes, materials or routing corrected to prevent it. As manpower shortages grow acute and women more and more replace men in the essential war industries, management will have occasion to be grateful for the intensive college training and tested practical experience now required of the dietitian to meet the requirements of her profession. For this is one job in which women are already fitted by heritage and training to take over. The problems of food supplies and distribution, with possible increasing severity of rationing, will make the dietitian's training and experience even more necessary to industry. As directors of personnel and industrial physicians you will wish to know that the American Dietetic Association sets standards of training and internship for our profession just as the American Medical Association and the College of Physicians and Surgeons do for the medical profession. Colleges have modified their curricula to meet these A.D.A. requirements in order to insure active membership for their graduates in their professional association, because membership in it is so important to professional standing and makes a concrete contribution to professional success as well.

Training and Experience

ACTIVE membership in the American Dietetic Association, therefore, is a guarantee to you that the dietitian has met the minimum semester hour requirements in chemistry, including physiological chemistry; the biological sciences, physics, bacteriology, biology and human physiology; the social sciences—economics, psychology, and sociology; nutrition, both normal and diet therapy; foods, including both food preparation, menu planning and research foods; and institutional management. This latter subject—institutional management—includes organization and administration, large quantity cookery, institutional accounting, personnel management, and institution food and equipment buying.

Of the total 120 semester hours required by colleges and universities for graduation with a major in foods and nutrition and/or institutional management, 65 semester hours are required in the sciences and technical subjects for active membership in the American Dietetic Association.

In addition to thorough scientific preparation, a college graduate with a Bachelor of Science degree must offer for active membership requirements in the A.D.A. a one-year intensive postgraduate student dietitian course in an institution that is on the Association's approved list of inspected institutions *or* two years of experience in a food department under a dietitian whose professional standards and achievements warrant recognition by the Association. At present, there are A.D.A. approved student dietitian courses of three types: (1) hospital, (2) administrative, and (3) food clinics. The hospital courses prepare for positions in the hospital field. The administrative courses prepare dietitians for administrative responsibility in college residence halls or dining halls, in school cafeterias, in restaurants, clubs, or hotels, and for industrial cafeterias. The third type prepares college graduates for positions as nutritionists in the community or in state department or other health agencies.

In the hospital a diet-therapy or research dietitian would never be expected to make good as the administrative head of the large and complex nutrition department; no more should this type of dietitian or a nutritionist be given similar authority in an industrial cafeteria.

Great confusion regarding the two terms, dietitian and nutritionist are evident in articles on nutrition in industry. Fundamentally a nutritionist motivates better nutritional habits for individuals or groups in a community by teaching them its importance. A dietitian secures improved nutritional health for those under her care in a given institution or industry by the food she feeds them. Therefore we think of the nutritionist as teaching or advising in the community or being called in from the community to advise or teach in the plant, and the dietitian as doing the job of feeding and promoting a sound nutrition education program within the plant.

An awareness of this need for specialized training is essential in setting up the job specifications for the industrial cafeteria manager, and exerts a major influence on decisions of policy with respect to the direct-line organization responsibility of the manager to a top executive. In addition, when the dietitian is the cafeteria manager she should be directly responsible to someone in authority sufficiently near the top so that his opinion on recommendations will carry real weight when backing up her administration.

Scope of Responsibility of the Dietitian

THE managements of Massachusetts industries have proved themselves past masters at utilizing the initiative and abilities of scientists, and technically trained workers and surmounting obstacles in personnel, physical plant, or materials to turn out the needed war materials. Proofs of their ability in this respect are the nearly 100 Navy and Army "E" awards in Massachusetts alone. I believe they will prove themselves no less astute in using the special abilities of this newest potential worker, the dietitian.

A careful analysis of the management policy, the organization structure and the scope of duties delegated to the dietitian where she has been tested and proved especially successful, suggests a departmental organization pattern similar to that now existing in the hospital as giving the greatest promise for industry. I commend it to your attention, since both the director of personnel relations and the industrial physician as director of the medical department are in a particularly strategic position to influence thinking in this area.

The dietitian should be made responsible for the entire service of food (wherever and whenever made available in the plant) including purchasing, planning, preparation, serving and cost accounting. She should

also hire and fire her own employees in accordance with personnel policies existing in the individual plant, and outline their duties and schedules of work. She should draw up a department budget for approval. The budget should be flexible enough to allow for a rise in food costs, the necessary price adjustments and the problems of procurement and availability that will result from rationing and scarcity of food products and of labor. I agree with Dr. W. A. Sawyer,[10] medical director of Eastman Kodak, who believes the advantages to industry in such a person are apparent. For, with a trained person heading the industrial cafeteria, food will be more wisely purchased and the charge to the employees less. Standardized recipes will be used in food preparation, and menus planned that will be nourishing and adequate and at the lowest possible cost. Offering the employees a complete plate lunch is the best method of selling good nutrition.

It seems important to devote this much time to a consideration of the contribution the dietitian is equipped to make in the feeding of industrial workers. If the dietitian's services are effectively used in this field where she has never been used to any appreciable extent before, the opportunities for the nutritionist in contributing her support to the nutrition education and to nutrition services for the family in the community will quite naturally fall into line. As I see it, the first job industry must do is to get the workers fed and this is the dietitian's province.

Nutrition Education in the Plant

THE nutrition education of the worker need not wait upon the availability of meals in the plant cafeteria that meet all the requisites of an adequate diet nor the establishment of a smoothly functioning and efficient nutrition department. Nutritionists from the Massachusetts Department of Health or from community organizations in your locality, such as the Massachusetts Community Health Association, can be requested to initiate such a nutrition education program in your plant. The new revised "War Emergency Nutrition Guide," prepared by the Nutrition Committee of the Division of Health, Massachusetts Committee on Public Safety, could be effectively used for teaching nutrition to small groups of women employees. Or large corporations may develop a sound nutrition education program for their employees and make it available to member organizations. The Nutrition Course for women of the Bell Telephone System, entitled "Food Makes a Difference," and to be used by the New England Telephone & Telegraph Company under Dr. Lynch's able guidance beginning in April, is one of the best that has come to our attention. There are also nutrition programs that have been used successfully by commercial firms for their own employees that are now available for use by any firm desiring to contract for their materials.

The monthly pamphlet services of wide awake casualty insurance companies offer a potential source of information for stimulating sound nutrition interest. These pamphlets are designed to bring the latest in research and plant practices to the supervisory staff members and to management itself as they affect the health of the worker or plant efficiency in any area.

Massachusetts Industrial Nutrition Program

MUCH has happened recently to promote an active Massachusetts Industrial Nutrition program. It was decided that results in this area were so necessary to the furthering of the war effort that a sub-committee on industrial nutrition should be set up to devote full time to the job. Since nutrition is a factor in the total industrial health picture, this subcommittee will serve under Mr. Bowditch's Industrial Health Committee and, since industrial nutrition is a part of the total nutrition picture for everyone in Massachusetts, it will also work through and support the efforts of the State Nutrition Committee, May E. Foley, Chairman. We hope that, although it is set up as a war effort functioning under the Division of Health, Massachusetts Public Safety Committee, the committee's activities will prove so important they will be carried on after the war through well-established permanent agencies of the state.

The possibilities for a state program in industrial nutrition are admirably developed in detail by Dr. Robert S. Goodhart[11] in his paper, "The National Nutrition Program for Industry," read at the fifth annual Congress on Industrial Health. These possibilities outlined by Dr. Goodhart fall into three broad categories for Massachusetts—services, surveys, and nutrition education in the plant. When we consider the contribution that our sub-committee on industrial nutrition has to offer management and labor in aiding them to attain their goal for increased production of war materials, we know that results will be attained only by the closest cooperation and active support on the part of everyone fitted in any way to make a contribution. We will welcome suggestions as to desirable representation on the committee as well as your help and your support at all times in promoting the committee's progressive development.

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Local Therapy for Industrial Burns

—Series of 96 Cases—

G. H. COLLINGS, Jr., M.D.,
Bethlehem Steel Company Hospital,
Sparrows Point, Maryland

IN AN EFFORT to determine the local treatment of choice to be used in industrial burn cases, a comparative study has been made of the agents in common use and the more recently developed drugs. To be of value in the treatment of a burned industrial employee, any agent used must meet the ordinary requirements of burn therapy plus additional special requirements which eliminate from our use many methods that would prove very valuable in general practice. The treatment of the more severe, and hence hospitalized, industrial burns is the same as for any other type of hospitalized burn, but for ambulatory industrial burns we have set up the following requirements of treatment:

IN GENERAL:

1. Rapid relief of pain and anxiety-opiates in large doses if necessary.
2. Control of shock by accepted methods.

LOCALLY:

1. Control of the loss of fluid and protein elements of the blood, both externally and into the tissues.
2. Elimination of existing infection and the prevention of bacterial contamination and growth.
3. Maintenance of the local comfort of the wound. This should continue for at least 24 hours, and preferably for several days, after dressing in order that the worker may continue at his job, and his revisits to the dispensary will be infrequent. Frequent revisits cause lost production time.
4. Achieve rapid epithelization of the injured surface so that scarring from granulation tissue will be held to a minimum.
5. Present a dressing which may be easily and quickly changed, allowing inspection of the wound; and a local surface covering which may be easily removed from an infected area.
6. Secure the most rapid healing possible, compatible with the foregoing requirements.

In view of the fact that this discussion deals only with local treatment, we shall dismiss general treatment with the observation that in severe burns the use of morphia, plasma, and other such agents is, more often than not, of greater importance than local treatment.

We have tried numerous methods of local treatment, only to discard them on account of their various inherent disabilities. Out of all we have tried, four have been found more or less suited to our industrial use. It is with these four methods that we deal here. The series consists of 96 cases ranging from multiple second-degree spot burns to extensive second- and third-degree burns. Included are burns of all areas of the body, of varying severity, and from almost every conceivable source from chemicals to molten steel; but excluded are all hospitalized cases.

METHODS EMPLOYED: In all cases, careful cleansing with a mild antiseptic was carried out and all dead tissue aseptically removed. A description of each method follows:

1. *Sulfafilm.** The debrided area was washed with a cleansing solution of 1:2000 azochloramid and 1:800 sodium tetradecyl sulfate. A section of sulfafilm (sulfonilamide in a dried parchment-like gelatin sheet) was cut to fit the burned area and softened in place with the cleaning solution. Dressings were applied to maintain the film in apposition to the wound surface. No change of dressings was necessary for two to three days. At the end of this time if there was infection beneath the film it was softened with saline, removed over the infection, and the area irrigated with sulfanilamide in saline solution. If no infection was present the film was allowed to remain intact until healing had occurred beneath it. At that time the film would usually separate of its own accord, but if not it was softened and then manually removed.

2. *Sulfadiazine (2½%) in Ethanolamines Solution (Pickrell).*** The debrided area was sprayed with this solution three times, at intervals of 10 minutes in order to allow each application to dry. Wet dressings of the solution were applied daily until healing was progressing satisfactorily and thereafter at two- or three-day intervals until completely healed.

3. *Sulfadiazine Powder and an Anesthetic Ointment.* In an effort to prevent fluid loss, sulfadiazine powder was dusted over the debrided area, and a locally effective anesthetic ointment was applied with the dressing. The wounds were repowdered daily for three to five days and thereafter as often as deemed necessary on examination. The anesthetic ointment was replaced with a bland vaseline ointment after two to three days when pain relief was no longer necessary.

4. *Sulfadiazine (1½%) in Ethanolamines Solution with Methyl Cellulose.*** This solution was applied with applicators or sprayed onto the debrided area and dried with a warm-air blower. A second and third coat were immediately applied in the same manner so that the dried methyl cellulose formed a flexible "form-fitting" film over the wound. On the second day two coats of film were applied and dried over those applied the previous day. On the third day one coat was applied and thereafter retreatments were done every two to three days, applying and drying the solution is as many coats as necessary to maintain protection for the wound. The dressings for all the preceding methods, unless otherwise stated, consisted of cotton lint cloth on which had been spread a very thin layer of vaseline or vaseline and 2½% bismuth subnitrate ointment to secure a soft comfortable bandage and to prevent drying and cracking open of the wound edges. This vaseline dressing was used alone for one or more days on some of the cases occurring on the night shifts, and the sulfonamide method was instituted when the worker returned to the clinic during the day. This period of time between injury and the application of one of the sulfonamide methods is shown in Table II as the "interval period." None of the burns with an interval period was debrided before the time of application of one of the sulfonamide methods, nor was any of them burned so severely that the blistered skin had separated exposing the denuded surface to direct contamination.

*Courtesy Wallace & Tiernan Products, Inc., Belleville, New Jersey.

**Courtesy Lederle Laboratories, New York.

TABLE I. SEVERITY

	Sulfafilm	2½% Sulfadiazine in ethanolamines solution (Pickrell)	Sulfadiazine powder and a local anesthetic ointment	1½% Sulfadiazine in ethanolamines with methyl cellulose
First-Degree Burns	14.2%	4.0%	0%	0%
Second-Degree Burns	85.8%	88.0%	70.0%	85.2%
Third-Degree Burns	0%	8.0%	30.0%	14.8%

TABLE II. TREATMENTS

		Sulfafilm	2½% Sulfadiazine in ethanolamines (Pickrell)	Sulfadiazine powder and anesthetic ointment	1½% Sulfadiazine in ethanolamines with methyl cellulose
Average number of retreatments per case	First-degree burns	1.00	1.00		
	Second-degree burns	3.83	6.04	5.86	3.00
	Third-degree burns		12.50	5.34	7.71
	All degrees	3.83	6.32	5.70	3.64
Average interval period per case	First-degree	0 days	0 days		
	Second-degree	2.00 days	3.37 days	1.71 days	2.55 days
	Third-degree		5.75 days	2.00 days	2.50 days
	All degrees	2.00 days	3.56 days	1.80 days	2.54 days
Length of time under treatment, Average per case	First-degree				
	Second-degree	6.00 days	8.95 days	12.00 days	6.45 days
	Third-degree		19.50 days	10.00 days	12.75 days
	All degrees	6.00 days	9.45 days	11.40 days	7.39 days

TABLE III. HEALING.

	Sulfafilm	2½% Sulfadiazine in ethanolamines (Pickrell)	Sulfadiazine powder and anesthetic ointment	1½% Sulfadiazine in ethanolamines with methyl cellulose
Percentage where healing was—GOOD	57.1%	80.0%	60.0%	90.6%
Percentage where healing was—FAIR	14.3%	20.0%	30.0%	7.5%
Percentage where healing was—POOR	28.6%	0.0%	10.0%	1.9%

TABLE IV. INFECTION.

	Sulfafilm	2½% Sulfadiazine in ethanolamines (Pickrell)	Sulfadiazine powder and anesthetic ointment	1½% Sulfadiazine in ethanolamines with methyl cellulose
Cases without infection	85.8%	68.0%	50.0%	81.5%
Infection present only before sulfonamide treatment begun	0.0%	8.0%	0.0%	7.4%
Slight infection	0.0%	12.0%	30.0%	7.4%
Moderate infection	14.2%	12.0%	20.0%	3.6%
Total with infection	14.2%	24.0%	50.0%	11.0%

RESULTS: In Table III are given the comparative results obtained with these four methods. All cases have been arbitrarily classed, according to healing as, GOOD, FAIR, or POOR.

Those without infection, with rapid epithelization of the area, with shorter than usual time for complete healing, with little external loss of fluid, and with no permanent scarring of consequence have been classed as healing-GOOD.

Those with slight temporary infection, only average speed of epithelization and healing, with no permanent scarring of consequence, and with only moderate external loss of fluid were classed as healing-FAIR.

All others were classed as healing-POOR. Also classed as healing-POOR were all cases in which the poor healing was aggravated by allowing the man to continue his work, although healing might have been good with the same treatment in a non-industrial case.

COMPARISON of Methods and Discussion of Results: Tables II, III, and IV give comparative results on the use of these four methods. Each method will be discussed in more detail.

1. *Sulfafilm.* Epithelization is rapid, infection is uncommon and healing is, on the average, good. However, this treatment has two limitations which prohibit its use in most industrial cases. Its application is complex and often time-consuming; but the most noticeable limitation arises from the drying of the film with stiffness and irritation of the area. All factors considered, it is not a suitable method for those who expect to remain at work while being treated. Nevertheless we feel that this method certainly has great possibilities in non-industrial cases and in hospitalized burns.

2. *Sulfadiazine (2½%) in Ethanolamines Solution (Pickrell).* In order to secure a continuous concentration of the solution, the wound should be sprayed three to six times daily for the first few days. This of course, is not compatible with keeping the man on the job. As an alternative, wet dressings of the solution were applied daily, but here again we encountered the disadvantages of drying and hardening noticed when sulfafilm was used.

3. *Sulfadiazine Powder.* As stated previously, this method was tried in an effort to prevent infection and also to control the external loss of fluid. Referring to Tables II, III, and IV, it will be found that it satisfactorily does neither. The method was discarded for these reasons.

4. *Sulfadiazine (1½%) in Ethanolamines Solution with Methyl Cellulose.* To date this method has proved to be our method of choice. Its disadvantages of being rather complex in application, and only moderately effective in the control of the loss of fluid, are greatly offset by near miraculous healing, comfort, and control of infection. Epithelization is very rapid (often as much as an inch a day) and scarring has been almost nil in our series of cases. The number of retreatments necessary for healing is far below that for any other treatment tried.

SUMMARY: Using four different methods of treatment, a series of 96 ambulatory industrial cases ranging from minor second-degree to severe second- and third-degree burns is reported. The advantages and disadvantages of each method of treatment in its application to industrial burns are discussed. From the results achieved we believe that, of the methods tried, 1½% sulfadiazine in ethanolamines with methyl cellulose is the local treatment of choice since it results in the greatest comfort, rapidity of healing, and fewest number of retreatments.

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Physical Placement Program

—For a Large Industrial Plant—

ALFRED C. DICK, M.D., *Chief Surgeon,*
JOHN L. BARRITT, M.D., *Ass't Chief Surgeon,*
T. W. WILLS, *Staff Assistant,*
Medical Division of Industrial Relations Department,
Consolidated Vultee Aircraft Corporation,
San Diego Division,
San Diego, California

THE purpose of the following program is the placement of handicapped or physically limited workers on the job they can best do.

The day when the industrial physician believed that he knew the physical requirements of every job in the plant is past. The day is also past when department heads can place workers without regard to their physical capacities and limitations.

There has been an acute shortage of labor in most parts of this country for many months. As the war progresses, this situation will undoubtedly become more severe. It has become necessary to employ workers with physical handicaps and limitations. This group constitutes a large pool of labor, and is one which will have to be tapped more deeply in the future.

The following program has been in effect at the Consolidated-Vultee Aircraft Corporation at San Diego, California, for approximately four months, and is an attempt to use such people intelligently, both from the standpoint of increased production and from the standpoint of the general welfare of the worker.

We believe that the proper placement of individuals with physical limitations will be a substantial factor in winning the war.

There are two prime factors involved in any placement program. The first factor concerns the physical classification of the worker. The second concerns the physical requirements of his new job. A very exact determination of each of these factors is necessary for a successful program.

The first factor, that of the classification of the worker, is best determined during the pre-placement examination. This requires a careful examination by a conscientious and skilled physician. It must be planned to give the exact information required. This information is rarely obtained by the old pre-employment examination. Further, the examination should be so standardized that a change in examining physicians will not affect the result. The results must also be set down in a standardized manner, preferably in terms that are understandable to a layman. For these reasons we have adopted a somewhat arbitrary set of standards in the form of a code. We have set upon the letters, A, B, C, D, as a general classification (see Table 1).

A worker might well be capable of heavy labor and still have other defects or limitations that would affect his work. These defects or limitations might include defective vision, defective hearing, skin sensitiveness, nervous instability, and many others. Therefore, in addition to the A, B, C, D code classification, we have set up a series of numbers as a modification of this general code (see Table 1). For example, a worker with defective vision but otherwise able to do heavy work would be coded "A-1." A worker capable of doing moderately heavy work but who is overweight, would be coded "B-15." A middle-aged worker with one eye, one arm, and a hernia, would be coded "C-1-8-9-15," etc.

The entire pre-placement examination is carried out with the purpose of arriving at this code classification. When this point is reached and the worker is coded, we have a record of the individual's physical qualifications and limitations that is understandable to all. Wherever the worker goes in the plant, his code classification on his record sheet indicates his physical status.

The second factor in the placement program concerns the physical requirement of the worker's new job. This factor includes a multiplicity of things. We must know whether the work is heavy or light, whether it involves climbing or continued sitting, whether toxic materials must be handled, or if muscular coordination is necessary, and many other such factors.

Every large industrial plant has job classifications and job titles. These job titles do not always mean the same thing. A job that one foreman will classify as light work, another will justifiably classify as moderately heavy, and there will be a wide variation in physical factors for the same job title, from department to department. Thus, someone other than the foremen must make the classification, but he must work with the foremen to their satisfaction.

This mass of information is obtained by a job classification after a very careful survey. With the cooperation of factory supervision, and using a survey sheet (see Table 2), a survey of each job in every department should be undertaken. Table 2 shows a survey sheet which we believe represents most of the physical factors involved on the job, and is stated in simple understandable terms. The fullest cooperation in completing the survey can be obtained by demonstrating to supervisory personnel the many advantages that will result from an intelligent placement program. Some of these advantages are increased production,

TABLE I. CLASSIFICATION OF WORKERS

GENERAL

A. Indicates worker capable of heavy sustained labor.
B. Indicates worker capable of moderately heavy labor.
C. Indicates worker capable of light labor.
D. Indicates worker capable of very light labor.

MODIFICATION

1. Worker with monocular vision or severe visual defect.
2. Worker with severe defect of hearing.
3. Worker who should have partial sitting.
4. Worker capable of sitting job only.
5. Worker with poor coordination.
6. Worker with nervous instability.
7. Worker with sensitive skin.
8. Worker with one arm. (Amputation.)
9. Worker with hernia.
10. Worker with tendency toward developing hernia. (Relaxed rings, large abdominal scars.)
11. Worker with history of back strain or injury.
12. Worker with chronic illness. (Cardiac lesions, nephritis.)
13. Worker with aphrasic characteristics. (Senile.)
14. Worker with arrested T.B.C., asthma, chronic bronchitis.
15. Worker unsuitable for climbing, working around dangerous machinery. (By reason of age, weight, or other factors—diabetes, epilepsy, hypertension, leg defects.)
16. Worker with partial limitation of one hand.

smaller turnover of personnel, and the elimination of personnel problems within each department. In addition, there will be a reduction in the number of industrial accidents and illnesses, and requests for transfers will be cut to a minimum.

In making the survey, the department head is given wide latitude in his evaluation of the jobs in his department. Whenever a question arises as to the interpretation of the survey sheet, or in the job evaluation, the individual making the survey should consult with the department head in arriving at an appraisal from the information received on the survey sheet. A permanent book is made up for the department head for his use in requisitioning help. In this manner the department head makes a specific requisition for a specific type of job to be filled. In addition, the information received from the department head is digested and codified for the use of the employment interviewers and the examining physician. This codification conforms to the code set up in Table 1. The employment interviewer makes the best placement in a general way, taking into account the visible physical limitations, and refers the applicant for physical examination. The examining physician, also using the above mentioned codification, serves as a final check on the suitability of the placement. It also is possible to expand the scope of the program to use this information in effecting transfers from one department to another.

The practice of most corporations is to employ a certain limited number of workers with gross physical disabilities. This is the more dramatic phase of a placement program. However, we feel that the so-called minor disabilities and limitations are of extreme importance, principally because they concern larger numbers of people. We believe that our present placement program is comprehensive enough for the proper assignment of those with gross defects and also those having minor limitations. For example, great difficulty is encountered among middle-aged women with varicose veins, whose jobs necessitate their standing continually, with consequent loss of time and costly medical care. We have discovered many operations which are partially sitting jobs and which eliminate a large part of this particular problem.

From a morale standpoint, and building good public relations, a great deal of good can be accomplished by a placement program. Many people have been both mentally and physically rehabilitated by discovering that they are needed in the war effort. A large source of our present labor supply is among middle-aged or elderly people who have previously felt that life had passed them by.

Table II

CONSOLIDATED-VULTEE AIRCRAFT CORPORATION

Job Survey of Physical Factors

Date________

Shift________

Plant No.____Dept. No.____Name of Department________Section or Division________General Foreman________Foreman________

JOB TITLE	PHYSICAL CODE No.	Is a man absolutely necessary?	Do You Consider Work to Be				Eye-sight Required			Are Eye Hazards Present	Hearing Required			Does Job Require					Can the Following People be Used										ARE HANDICAPPED PEOPLE USED?
			Heavy	Moderately Heavy	Light	Very Light	Good	Fair	Poor Permissible		Good	Fair	Poor Permissible	100% Standing	100% Sitting	Partial standing & partial sitting?	Any climbing?	Working in cramped position?	Elderly Man?	Elderly Women?	One Armed Workers?	Partial limitation in one hand?	One legged workers?	Blind workers	Deaf Mute	Worker with nervous instability?	Worker with poor coordination?	Worker with sensitive skin?	

Insert "Y" for Yes, and "N" for No.

The resultant benefits of a placement program are obvious. The employee feels that an attempt has been made to fit him for a job that he can properly do. He will consequently make a stronger attempt to stay with his job assignment. From the standpoint of management, the benefits are: increased production, reduction of transfers and other personnel problems within the plant and a decrease of industrial accidents and illnesses.

One of the outstanding problems in industry today is the much discussed question of absenteeism. Since February 1, 1943, we have placed over one thousand men and women with physical limitations of varying nature and severity. Preliminary attendance studies have shown that the absentee rate among these people is less than one-half of the average rate for the plant.

A word of caution should be interjected here. This program is not designed to find an easy job for people and it must be with a great deal of force that we resist the placing of this interpretation upon this program. It definitely does fit employees to jobs and definitely does not fit jobs to employees.

This program, like many others, must also be made two-edged. As long as healthy workers are doing jobs that handicapped workers could do as well it will not be successful. Physically fit workers must take the jobs requiring physical perfection to make room for the others. There should be no problem in finding hard jobs for the fewer and fewer physically perfect specimens the war will leave in our plants.

Summary and Conclusion

In every large industrial plant there are many jobs which can be done on a full time, full production basis by men and women with physical limitations.

2. However, the placement of these people must be done with intelligence and foresight.

3. The benefits to be derived will more than offset the amount of time necessary for the setting up of a well planned program.

4. A thorough job survey is the first essential step.

5. The information received should then be codified for the use of both medical and lay personnel in the proper placement of all employees.

6. It would behoove every progressive industry to anticipate future labor needs by a program for the use of the large reserve pool of handicapped and limited workers.

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Editor: C. O. Sappington, M.D., Dr. P.H.
Associate Editors:
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No Cause for Alarm

Industrial health has become a subject of primary interest in the minds of many people. This is a development of the last few years. It began suddenly and has grown rapidly—at a rate vastly accelerated by the war effort. From one standpoint, it came too suddenly and its speed of growth has been too rapid, in the sense that many of those whose interest is being translated into activity are professionally unimpressive and, lacking the maturity of thought that comes with long experience, are more emotionally than intellectually aroused. The result is that the field in certain of its departments has indigestion, and very much needs the steadying advice of the men who are really and thoroughly grounded in industrial medicine. Much of what the newcomers have to offer is worthy, and when it is seasoned will be of great value. There are enough career men in industrial medicine and surgery to help season it, by tempering and directing the super-enthusiasms of those who are as yet young in its adaptations. Fortunately these older men are not reactionaries; they can go along with an idea; and thus the emotionalism and enthusiasm will not be permitted to take anyone very seriously astray. So far as these qualities among the newer professions in industrial health are concerned, they, together with the zeal and eagerness—and even the not unusual naïvete—of their manifestations, are infinitely more to be desired than inertia.

Applied Prevention

For about the last 15 years the opinion has been solidifying into the rule that a high call rate in the industrial medical department or dispensary is a measure of the success of the medical program. Lately it has become apparent that this call rate is a yardstick of the effectiveness of the preventive phases of the program. The measurement of prevention is exceedingly difficult; no one can tell exactly how many minor cases might have developed into major ones. It may be allowable, however, to believe that all of them could, because the rule that every minor case treated means a major case headed off can be generally applied, and in all of its applications it will have the same effect. The number of medical department and dispensary calls, therefore, can well be taken as a co-efficient of prevention; and the department that has the most calls can safely be thought of as doing the most preventing—providing, of course, that there is no epidemic of injuries or illnesses. On this basis, the medical department of Lever Brothers, Ltd., at Toronto, is doing a superb job along preventive lines. As noted on page 266, with about a thousand employees, the dispensary calls average 400 a day. The employees are urged to make these calls on every provocation, even the smallest. And the company is proud of the number of calls that are made, feeling that the expense—in every component of medical department maintenance, time away from the job and other factors—is more than justified in the fact that practically all of its employee medical troubles seem to be little ones.

More Bonds!

An editorial in Industrial Medicine for December, 1943, urged every industrial physician and surgeon to buy United States War Bonds. Considerable space was devoted to explaining the necessity for this action. At that time there was fear in many minds that the government might not be able to float the nine-billion loan which was the goal, and it was a pleasant surprise, therefore, when that amount was met and then exceeded by several billions more. This fine result was achieved by hard personal work, and lots of it. Chicago is outstanding in that not only is it one of the medical centers of the world, but it is also one of the leading business cities in the United States. Many things go on here which, to a watchful individual, demonstrate trends, and almost forecast events. One observing the progress of the December drive in Chicago could have seen the personal business of bond selling at its best. In the bigger bond houses and in the bond departments of the various banks, nearly everybody was away from his desk; they were out making calls, on trust funds and individuals, diligently pressing the sale of bonds—a situation which, no doubt, was duplicated in many other large cities. But even with the success of the drive and the over-subscription, there still remained the very important consideration that the volume of sales to individuals was not up to the expected proportions. In urging that individuals rather than banks take on more of these bonds there was a double purpose—to provide funds for carrying on the war, and to provide these funds in such a way as to minimize the chances of inflation. In our editorial careful explanation was made as to why this was necessary, and how it would operate. We believed that any appeal Industrial Medicine could make should be made. Our feeling now is the same as it was then, considerably enhanced.

It is not easy for us who are here at home to com-

FOUR DIVISIONS LOST

...without a gun being fired!

OVER 50,000 men—potential material for military purposes were lost—rejected during the early days of selective service because of venereal disease. More than 75 per cent had gonorrhea. The incidence of this disease increased—due in a measure to the sexual promiscuity of women who harbor the gonococcus.

"Since Sulfathiazole seems to cure a high proportion of gonococcal infections in both sexes, the prompt use of this drug should result in an early 'chemical quarantine' of many of the infections. . . . There is reason to be optimistic over the eventual control of gonorrhea, for it should now be possible to cure the disease much faster than it can spread."[1]

Whether given over a period of 5 or 10 days, the oral administration of 20 grams of sulfathiazole has been shown by rigid clinical criteria to be effective in about 80 per cent of cases. In this dosage the drug is comparatively free from severe toxic effects; is economical to use; and can generally be employed without necessity of hospitalization. The need for adequate case follow-up is, of course, still an essential feature of control.

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Caution: All sulfonamide compounds should be administered with due recognition of their side effects and contraindications. Information concerning their proper uses will be sent to physicians on request. Address the Professional Service Department, 745 Fifth Avenue, New York, N. Y.

[1] The Neisserian Medical Society of Mass., *New Eng. J. Med.* 225:228 (Aug. 7) 1941.

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prehend the difficulties involved in the absolute necessity that we not only supply the soldiers and doctors who are working under very adverse conditions, fighting the enemy on our various fronts, but also that we keep the situation here at home as clean as possible for those soldiers and doctors when they return. As to most of the soldiers and all of the doctors, they are working under reduced incomes and, moreover, they stand a chance of losing their lives. Certainly we who are carrying on here can keep this in mind. And, keeping it in mind, we can develop the attitude that we too are working on reduced incomes and should accumulate the difference between what we would consider such a reduced income and our actual income and use this difference to *buy more than our share* of bonds. It behooves all of us, and each of us, to think in "total" terms—to think of our personal situations in relation to the fact that our country is engaged in a war that it must win. Thinking that way, we will buy not only our share, but two, three, or four times our share; we will not be shrewd investors, taking the opportunity to get into common stocks more heavily at this time than normally, but we will be *patriotic* investors getting into government bonds more deeply than we ever thought possible. No investment list is going to be top heavy with any proportion of government bonds. This is not a suggestion to transfer funds from stocks to government securities; it is only a suggestion to buy *more* government bonds.

The present drive, like the first one, will be successful. It is the American way that such things succeed. But there may be also the repetition of too little individual buying. So *buy more;* after the present drive is over, buy from the banks. They will have them for sale; and the *patriotic* American, whether he is an investor or merely a spender, will adopt the attitude of not buying anything that he does not need—denying himself everything that he can get along without, and putting the money he would otherwise have spent into the war effort through continuing and repeated purchases. The more who do this the less the fear of inflation and the better the situation to which our soldiers and our fighting doctors will return. They are engaged, to the last full measure of their capacities, in winning the war. We should be engaged not only in helping them to win it, but also in preparing to safeguard all that they shall have won.

No difficulty would be experienced in selling every individual in the country more than his share of bonds if Japan had already bombed the West Coast and were now sending planes over homes and factories inland. But that is only relative; the Japs are just a bit further away, and it is not impossible that they might come closer. Their bombing is being done in New Guinea and Guadalcanal. But even there they are bombing our property, our sons and our neighbors' sons.

All doctors are quick to see the necessity of definite actions as they are called upon from time to time in this life. There is little doubt that they see the necessity of the action we are urging here; little doubt that most of them are going the limit in subscribing to this second war loan. From the double standpoint of both helping to pay for the war and helping to minimize the almost inevitable inflation that accompanies wars, we would ask them, however, to go a little further, and not only to buy, but also to let it be known that they are buying, and to spread the gospel of buying more and still more. For every dollar that is withdrawn from idle funds and put into these war bonds, every dollar that is switched from the purchase of something that somebody can get along without, is not a single dollar contributed to the war effort, but is two or three or four dollars—because it helps to prevent the pyramiding that can be prevented only in this way.

Consultation Service

THE industrial physicians and surgeons who attend the Rochester sessions this month will find that the term WAR CONFERENCE has real significance. The problems to be discussed are essentially *war* problems, and the plan of discussions will bring the *conference* method right into the meetings. As DR. WITTMER indicates, the medical part of the program this year is different. Industrial physicians and surgeons are facing many situations which require such quick and specific handling that, for the time being at least, the academic must yield to the practical. These situations have a common denominator in the war, and the fact that many of them may not have occurred in all war plants doesn't mean that they won't; it means only that they haven't yet got around. Every physician who has encountered and solved one of these new and sudden problems is one up on his fellows in that respect—but only in that respect, because he is also one down to every other physician who has solved some other problem. The instant matter in many minds is thus the disposed-of matter in others. The program committee early realized that there are now so many problems of this kind that any series of formal papers could let only a few of them be touched upon. They chose, therefore, to develop a continuing series of informal and more or less impromptu conferences among small and intimate groups—"bull sessions," if you please—where the physician who has experienced a difficult problem can sit in as consultant to the others who are just meeting it. It is safe to say that, somewhere in the teeming vastnesses of industries-gone-to-war, there is hardly a medical question that some industrial physician has not already met and disposed of. The idea is that those who want to know will have the opportunity to ask; and those who have learned from experience won't hesitate to answer.

In this way free scope will be given to that man-to-man interchange of knowledge which is the most valuable part of any medical meeting, but which, in the past, has so frequently been subordinated to formality or to personality. This value is greatly increased by the unlimited variety of matters this method permits to be discussed.

The A.A.I.P.& S. is to be congratulated on an original and patriotic response to the urgent concerns of the hour. Events move fast, and demands on professional skills and abilities are strange and unexpected, sudden and imperative. It is no time, therefore, to stand on ceremony. The more questions, the better. As the industrial hygiene editorial on this Conference said last month, the unwritten program can be more interesting than the written one; "the board of experts will be almost unlimited in number and experience."

A somewhat casual use of this type of program has very pointedly shown that the listeners get more out of informal than formal sessions. Possibly this has

"We all know that finding tuberculosis is a question of looking for it."

Thus we quote the Medical Director of a large manufacturing organization which since 1921 has followed a program aimed toward the elimination of tuberculosis in its organization and community. Recalling their first step — the radiographic examination (single chest films) of several thousand apparently well adult employees — he cites the fact that 2.3 per cent of those films were diagnosed as positive, and 1.4 per cent suspicious.

To those who pioneered in this field the following figures—reported at the 1941 *Symposium on Tuberculosis in Industry*—may well prove gratifying: In 1911, this disease was the first cause of death among wage earners, accounting for 20 per cent of their mortality; today it is fifth in importance and is responsible for 6.5 per cent of their deaths.

That there is wide recognition of the importance of mass chest surveys, is evidenced by the increasing use of the G-E Photoroentgen Unit in hospitals, tuberculosis associations, city, county, and state health departments —likewise in U. S. Army induction centers. For the development of this unit has made it feasible to use 4 by 5-inch instead of 14 by 17-inch x-ray films, at about one-tenth the material cost.

We shall be glad to send authentic reprints which cover this subject in its various aspects, including the results of a number of extensive surveys. Ask for Reprint Set No. D15.

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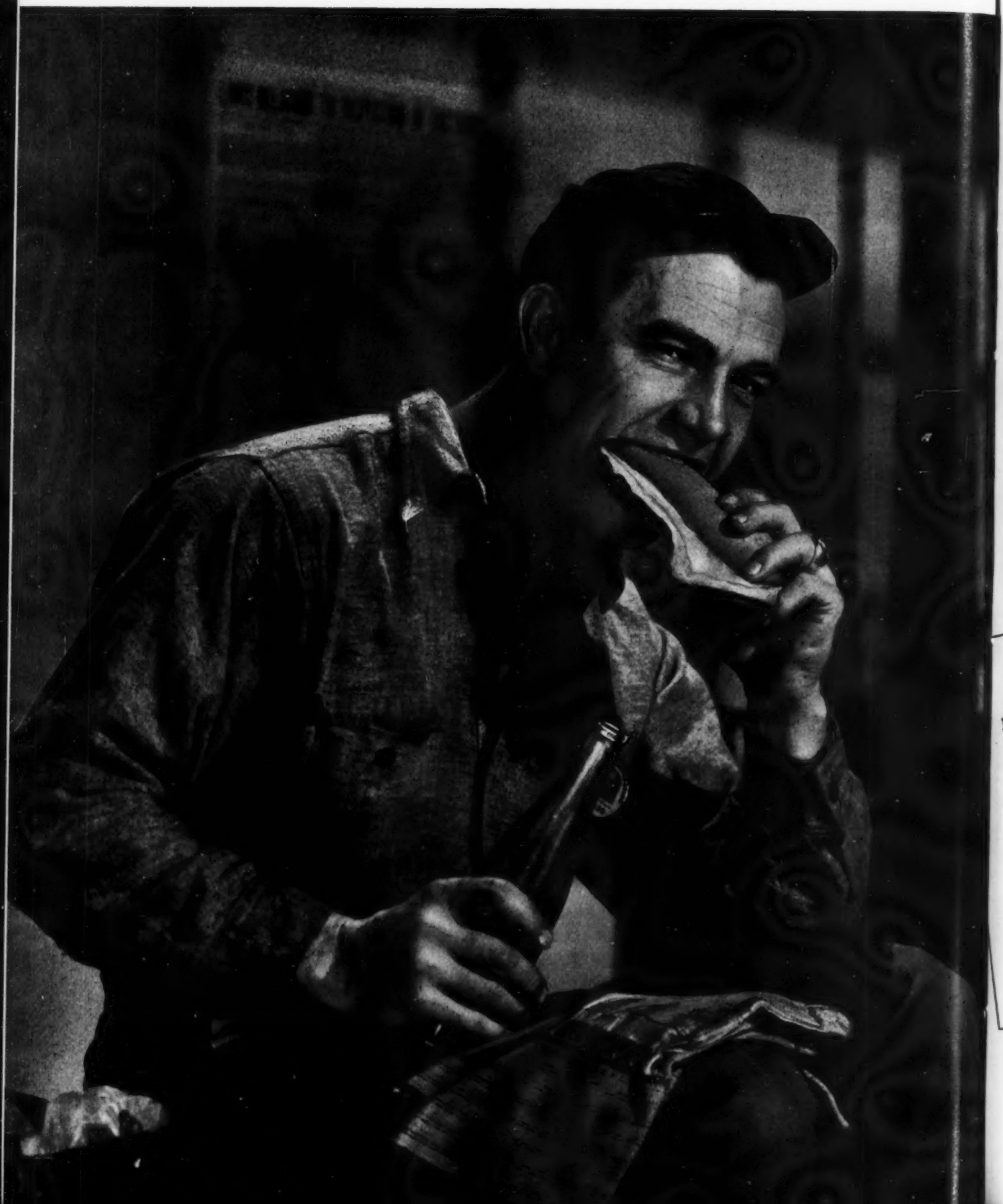

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Most factory and office employees . . . as well as many other people . . . eat merely to satisfy hunger. Their meals are varied, certainly, but more often than not they are nutritionally inadequate. Because of this, millions of war workers are suffering the detrimental effects of dietary deficiency.

Only recently the Surgeon-General of the United States Public Health Service revealed the gravity of this situation by stating:[2]

> "Forty per cent of the American people are malnourished, suffering from some form or type of malnutrition. A correction of this condition would create a new America."

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[1]Council on Pharmacy and Chemistry and Council on Foods and Nutrition: The Proper Use of Vitamins in Mixtures, J.A.M.A., 119:948:1942.
[2]Editorial: J. Nat., Med. Assoc., Vol. XXXIV:252:1942.

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some relation to the fact that they feel more at liberty to participate in the informal gatherings, and can be, if they choose, on the giving as well as the receiving end. The full expression of the new idea planned by the A.A.I.P.& S. for the Rochester days and evenings, might easily lead to the general adoption of a meeting pattern that will supplement, or even supersede, the forms of the past. In any event, DR. SAWYER'S program committee is conforming most admirably to the war tempo. So come—*with questions!*

American Association of Industrial Physicians and Surgeons

WAR CONFERENCE

May 24-27, 1943 Rochester, N. Y.

TO THE MEMBERS:

During these critical times, it would be only with a feeling of some reluctance that we would normally ask our members to attend our regular annual meeting; but this is an unusual meeting.

We are having a quick, intensive series of conference meetings. Four days in all for our own meetings and those of the Industrial Hygienists and the Governmental Hygienists, with especial emphasis for one and one-half days on subjects that concern the industrial physician.

Wartime has brought many new medical problems to our companies. New industries have sprung up. The industrial physician has had to double his capacity, in order to serve his country well on the vital home front.

You cannot afford to miss the talks and the discussions on these acute industrial, medical and surgical problems with which you and we are now faced.

Inasmuch as we all are facing these problems on a common level, it might be wise to bring along an associate, a competitor, or one of the less experienced men in your area, who has recently joined the industrial medicine field, and who might be benefitted not only individually, but as one of our "team" who are helping to win the war.

I trust that you will be able to confer with us May 24-27.

Sincerely,
JOHN J. WITTMER, M.D., President.

PRELIMINARY PROGRAM

National Conference of Governmental Industrial Hygienists

Monday Morning, May 24

FIRST SESSION—MARION F. TRICE, presiding:

"Industrial Medical Facilities in Pennsylvania—Results of a County by County Survey"—JOSEPH SHILEN, M.D., Director, Bureau of Industrial Hygiene, Pennsylvania Department of Health, Harrisburg, Pennsylvania.

"Administrative and Working Relationships Between the Georgia Industrial Hygiene Service and the U. S. Maritime Commission"—LESTER M. PETRIE, M.D., Director, Industrial Hygiene Service, Division of Preventable Diseases, Georgia Department of Public Health, Atlanta, Georgia.

"Health Conservation in Industrial Establishments of the War Department"—LIEUT. COL. WILLIAM J. MC CONNELL (MC), Safety and Security Branch, Office of the Chief of Ordnance, War Department, Chicago.

Monday Afternoon, May 24

SECOND SESSION—JAMES G. TOWNSEND, M.D., Chief, Division of Industrial Hygiene, National Institute of Health, Bethesda, Maryland, presiding:

ROUND TABLE Discussion:

"Governmental Industrial Hygiene Practice in 1942"—JOHN J. BLOOMFIELD, Sanitary Engineer, Chief, States Relations Section, Division of Industrial Hygiene, National Institute of Health, Bethesda, Maryland.

Regulation in the Use of Toxic Substances:

"Radium Painting and Carbon Tetrachloride"—MANFRED BOWDITCH, Director, Division of Occupational Hygiene, Massachusetts Department of Labor and Industries, Boston.

"Chlorinated Naphthalenes and Diphenyls"—LEONARD GREENBURG, M.D., Executive Director, Division of Industrial Hygiene, New York State Department of Labor, New York.

"Effects of the War on the Scope of Industrial Hygiene Services"—LLOYD M. FARNER, M.D., Director, Division of Industrial Hygiene, Washington State Department of Health, Seattle, Washington.

American Industrial Hygiene Association

Tuesday Morning, May 25

DIETHYLAMINOETHANOL as a Reagent for the Detection and Colorimetric Determination of Small Amounts of Trinitrotoluene in Air"—F. H. GOLDMAN, PH.D., Division of Industrial Hygiene, National Institute of Health, Bethesda, Maryland.

"A Rapid Field Method for the Determination of Nitrogen Dioxide in the Air"—F. A. PATTY and G. M. PETTY, PH.D., Fidelity and Casualty Company of New York.

"A Fusion Method for the Determination of Free Silica in Industrial Dusts"—LESLIE SILVERMAN, SC.D., Harvard School of Public Health, Boston.

"An Efficient Mist and Vapor Sampler"—GORDON C. HARROLD, PH.D., Industrial Hygiene Laboratories, Chrysler Corporation, Detroit.

"The Determination of Volatile Halogenated Hydrocarbons in Blood"—H. E. MORAN, Division of Industrial Hygiene, National Institute of Health, Bethesda, Maryland.

"Potential Health Hazards of the Synthetic Rubber Industry"—F. S. MALLETTE, Firestone Tire & Rubber Co.

Tuesday Afternoon, May 25

PLUMBISM Resulting from Oxy-acetylene Cutting of Painted Structural Steel"—IRVING R. TABERSHAW, M.D., Division of Occupational Hygiene, Massachusetts Department of Labor and Industries, Boston.

"Control of Lead Exposures"—JOHN B. LITTLEFIELD, American Brake Shoe and Foundry Company, Chicago.

"Exposures to Fluorides in Magnesium Founding and Its Significance"—EDWARD J. LARGENT and IVAN F. FERNEAU, Kettering Laboratory of Applied Physiology, University of Cincinnati, College of Medicine, Cincinnati.

"Chlorinated Hydrocarbon Exposures at Various Degreasing Operations"—KENNETH MORSE, Division of Industrial Hygiene, Illinois State Department of Health, Chicago.

"Tripoli and Silicosis"—C. P. MCCORD, M.D., G. C. HARROLD, PH.D., and S. F. MEEK, M.D., Industrial Hygiene Laboratories, Chrysler Corporation, Detroit.

Wednesday Morning, May 26

THE ACUTE Toxicity of Benzene, Toluene, and Certain of Their Mixtures"—DR. J. L. SVIRVELY and R. C. DUNN, M.D., Division of Industrial Hygiene, National Institute of Health, Bethesda, Maryland.

"The Physiological Response of Animals to Cyclohexane, Methylcyclohexane and Certain Derivatives of These Compounds. II. Inhalation"—JOSEPH F. TREON, WILLIAM E. CRUTCHFIELD, and KARL V. KITZMILLER, Kettering Laboratory of Applied Physiology, University of Cincinnati, College of Medicine, Cincinnati.

"The Threshold Toxicity of Gasoline Vapor"—CECIL K. DRINKER, PHILIP DRINKER, C. P. YAGLOU, and MADELEINE E. FIELD, Harvard School of Public Health, Boston.

"The Detoxification of Organic Compounds by Conjugation with Sulfuric and Gluconic Acids" — WILLIAM DEICHMANN, Kettering Laboratory of Applied Physiology, University of Cincinnati, College of Medicine, Cincinnati.

"Animal Experiments on the Relation of Silica and Feldspar Dust to Susceptibility to Lobar Pneumonia"—ANNA M. BAETJER, SC.D., School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Maryland.

"DONALD E. CUMMINGS, 1900-1942"—L. U. GARDNER and PHILIP DRINKER.

Wednesday, May 26

THE following clinics at the University of Rochester, Crittenden Boulevard, Rochester, will be run concurrently with the regular Wednesday sessions of the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION, and the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS.

10:00 A.M. to 12:00 Noon

A Clinic for Industrial Surgeons—

J. J. MORTON, M.D., Professor of Surgery, University of Rochester Medical School.

Subjects to be discussed will include Shock, Plasma, Burns, Traumatic Injuries, Antiseptics, etc.

2:00 P.M. to 4:00 P.M.

HAROLD HODGE, PH.D., Associate Professor Biochemistry, University of Rochester Medical School.

Subject: "Techniques of Applications of Radioactive and Heavy Isotopes."

Company dinner conferences will be held on Wednesday evening.

American Association of Industrial Physicians and Surgeons

Wednesday Afternoon, May 26

WOMEN in Industry—Chairman, DR. C. H. WATSON. (Subjects and speakers to be announced.)

Wednesday Evening

PUBLIC Meeting at Eastman Theatre. Presentation of Knudsen Award.

Thursday Morning, May 27

EMPLOYMENT of Handicapped and Substandard Workers, Chairman, DR. H. A. VONACHEN.

1. "Streamlined Pre-Placement Examinations in Relation to the War Program"—DR. JOHN J. PRENDERGAST, Medical Director Chrysler Corporation, Detroit.
2. "Employment of Physically Handicapped and Their Rehabilitation"—DR. JAMES H. BIRAM, Medical Director Colt's Patent Arms, Hartford, Connecticut.
3. "A Practical Rehabilitation Program"—DR. H. A. VONACHEN, Medical Director Caterpillar Tractor Company, Peoria, Illinois.

Summary of above papers with conclusions—DR. C. O. SAPPINGTON, Consultant, Chicago.

Thursday Afternoon, May 27

RELATIONSHIP of Health Problems to Absenteeism, Chairman, DR. L. A. SHOUDY.

1. "Absence Due to Sickness"—DR. DANIEL L. LYNCH, New England Telephone and Telegraph Co., Boston.
2. "Absence Due to Causes Other Than Sickness (Voluntary and Involuntary)."
3. "Absence Due to Malnutrition"—DR. JOHN R. MURLIN, Professor of Vital Economics, University of Rochester.

THERE will be informal conferences and consultations throughout the four days. We suggest you bring your present problems and questions about them. The Committee will see that you have the chance to confer with someone who has already encountered the same problems.

EXHIBITORS

Booth 1 Holland-Rantos Co., Inc.

HOLLAND-RANTOS Co. will display the very latest industrial garments and beddings made from substitute rubber products.

Be sure to examine the Rantex Caps and Masks, ideal for non-toxic nuisance dust.

Register for a sample of NYLMERATE, an antiseptic tincture for surgical treatment and first aid.

The universally known KOROMEX contraceptive specialties will be on display including the new Koromex set complete, a combination package suited for either prescription or dispensing purposes.

Booth 2 Carbisulphoil Company

MANUFACTURERS of FOILLE Emulsion indicated in the treatment of burns, sunburn, frost-bite, abrasions and lacerations. Growing bibliography attests to especial usefulness of FOILLE in deep burns, third-degree burns of extremities, joint-creases, face and genitalia, markedly controlling pain, accelerating granulation and epithelization to permit earlier skin-grafting and materially reducing scarring contractures. Widely employed by the Armed forces and Industry. Visit our exhibit for special information on tar and asphalt burns, chemical and electrical burns. General clinical material made available for your investigation.

Booth 3 Hospital Equipment Corp.

HOSPITAL EQUIPMENT CORPORATION of New York City will display equipment and supplies for Medical, Nursing and First Aid Departments. Laboratory units, lighting equipment, diagnostic and surgical instruments as well as many other essentials will prove of interest. A comprehensive Catalog is available. All details required toward solving equipment problems or data on specific items will be clearly and promptly submitted. Sales and Service facilities are also maintained in Chicago, Dallas, Pittsburgh, Newark and Jersey City. Visits to our Booth will be appreciated.

Booth 4 J. B. Lippincott Company

ESSENTIALS OF INDUSTRIAL HEALTH by C. O. Sappington, M.D., Dr.P.H., is the timeliest of the outstanding new Lippincott books; Brown & McDowell's SKIN GRAFTING OF BURNS is another important new book. Two useful and concise handbooks are Strecker's FUNDAMENTALS OF PSYCHIATRY and Kampmeier's ESSENTIALS OF SYPHILOLOGY. Most practical and already a classic is Ferguson's SURGERY OF THE AMBULATORY PATIENT with a modern section on fractures and dislocations. What the surgeon should not do is admirably presented in the new fourth edition of Thorek's unique SURGICAL ERRORS AND SAFEGUARDS. Be sure to see them at the Lippincott booth!

Booths 5, 6 Picker X-Ray

PICKER X-Ray Corporation will exhibit the Army Field X-Ray Unit and Light Weight Air Corps Unit, of which they are the sole manufacturers for the U. S. Army. There will also be on display a number of x-ray accessories of recent development and advanced design. Mr. Walter Steinkamp will be in charge of the exhibit.

Booth 7 Graybar Electric Company

THIS exhibit centers around the new 5-Point Victory Program released last month by the GRAYBAR ELECTRIC COMPANY—National Distributors for Western Electric Hearing Aids. The theme is "How a Hearing Aid opens the door for the user to a more important and more productive part in wartime effort." Details for cooperation with Doctors, War Industry Personnel Directors and Employment Agencies have been worked out. The complete line of Western Electric Hearing Aids and Audiometers, developed by Bell Telephone Laboratories Research, will be shown. It is interesting to know that much of the Communications Equipment used at the battle fronts is Western Electric — designed by these same research laboratories.

Booth 8 Keystone View Co.

KEYSTONE INDUSTRIAL VISUAL SAFETY SERVICE is used by many outstanding manufacturers to determine if their employees are visually fitted for the work to which they are assigned.

The KEYSTONE INDUSTRIAL VISUAL SAFETY SERVICE gives a rapid, concise test of visual skills which include color discrimination, visual acuity, vertical imbalance, depth perception, ametropia, near point vision, fusion, and lateral balance.

You are invited to visit our booth for a demonstration of these tests.

Booth 9 Fidelity Medical Supply

YEARS of research work have been devoted to the study of the problems of industrial medicine, and to the perfecting of the products displayed at our booth.

STERICIDE; an effective solution for the rapid cold sterilization of surgical instruments, plastics, rubber, and glass; contains no Formaldehyde, no Phenol, and no Cresols.

SULFATHIAZOLE-UREA OINTMENT is an out-

Announcing...

A NEW DEVELOPMENT OF MERRELL RESEARCH

NETHACETIN

BRAND OF SYMPATHOMIMETIC ANODYNE TABLETS

FOR MORE EFFECTIVE MANAGEMENT OF PRIMARY DYSMENORRHEA

Attempts to abolish the pain of excessive menstrual contractions by analgesic medication alone have met with poor success. However, by combining a new sympathomimetic amine with established analgesic drugs, Nethacetin affords a new measure of relief in primary dysmenorrhea by providing—

RELIEF OF PAIN
plus
CONTROL OF UTERINE SPASM

FORMULA

Methylethylamino-phenylpropanol (Nethamine brand) hydrochloride. ⅔ gr.
(levo-N-ethylephedrine hydrochloride)

Acetophenetidin..... 3½ grs.

Acetylsalicylic acid..... 2 grs.

Nethacetin is supplied in bottles of 100 and 1000 tablets.

CLINICAL EFFECTIVENESS

Extensive pharmacologic studies of Nethamine demonstrated its ability to increase tone of uterine muscle tissue while diminishing or inhibiting individual contractions. It is superior to ephedrine in this respect; also its pressor action and stimulating effect upon the central nervous system are very slight as compared with ephedrine.

On the basis of this experimental work, a controlled clinical study of Nethacetin was undertaken, using an industrial group of 113 dysmenorrheic patients. Results of this study* were as follows:

"A new sympathomimetic amine, methylethyl-amino-phenylpropanol (Nethamine brand) hydrochloride, has been shown experimentally to diminish or completely inhibit uterine contractions.

"Incorporated with acetophenetidin and acetylsalicylic acid in tablet form, it was used to relieve dysmenorrhea in a group of young women employed in industry. Of this group 85.3% were relieved.

"As a control, identical tablets containing the same amounts of aspirin and phenacetin and no Nethamine were administered to this same group. Results were not nearly so successful as when the tablet containing Nethamine was given.

"It appears from this preliminary report that this new compound may be useful in the management of primary dysmenorrhea and that it will serve as a practical means of reducing absenteeism among female industrial workers."

DOSAGE AND ADMINISTRATION

For the relief of pain and spasm in primary dysmenorrhea, two tablets are administered with hot water, followed by one tablet every 2 or 3 hours as needed. Usually not more than three tablets are needed for each period.

*Fairo, C. J.: Nethacetin in the management of primary dysmenorrhea, Indust. Med., *12*:201-202 (1943).

Trade Marks "Nethacetin" and "Nethamine" Reg. U.S. Pat. Off.

MERRELL

115th Year

THE WM. S. MERRELL COMPANY

CINCINNATI, U. S. A.

THE WM. S. MERRELL COMPANY
Lockland Station, Cincinnati, Ohio

Gentlemen:

Please send complete literature and clinical sample of

NETHACETIN TABLETS

Dr......
(Please Print)

Address.....

City.....*State*.....

standing treatment for industrial wounds, ulcers, and thermal, chemical, electrical, or friction burns.

COLLODIAL SULFUR CREAM for the treatment of metal dermatitis.

SALITAL, a safe effective analgesic, for general use in the relief of pain.

LITERATURE AVAILABLE AT BOOTH.

Booth 10 Denver Chemical Mfg.

ANTIPHLOGISTINE, the original kaolin cataplasm, employed by physicians everywhere in the treatment of many inflammatory and congestive conditions. Particularly applicable in many of the traumatic conditions encountered by industrial physicians.

GALATEST, the dry reagent for the instantaneous detection of urine sugar. GALATEST is now used routinely by many leading hospitals and medical departments of industries, and by more and more private practitioners every day. It is accurate, simple, speedy and economical. The presence or absence of urine sugar is determined in 30 seconds. GALATEST is accepted for advertising in the *Journal of the American Medical Association* and in *Industrial Medicine*.

Booth 11 Johnson & Johnson

JOHNSON & JOHNSON exhibit in booth No. 11 will feature many new Ethicon Suture items, including tubed sutures with special purpose, trauma-reducing, swaged-on needles for use in eye, nerve and other surgery, as well as linen, nylon and silk suture materials in the finer gauges. Of special interest also are their tubes of sterile fascia lata available in strips or sheets.

Be sure also to ask the representative at this booth about how you may obtain your free copy of the new, practical handbook on "Operative Procedure."

Information, too, may be had here in regard to scheduling free showings of their interesting and informative film, "Sutures Since Lister," in connection with surgical programs.

Booth 12 J. R. Siebrandt Mfg. Co.

THE GOODWIN BONE CLAMP simplifies the technique for open reduction of long bone fractures. With this Clamp, the bones are easily aligned, and, when wiring fractures, the entire operation from drilling holes to the tightening of the wires is all done with this Instrument and a few accessories. It also controls direction and depth of drilling, indicates the diameter of bone, and calculates the correct length of screw to use for applying Bone Plates. See this Clamp, also the Griswold Reduction Frame, Combination Kirschner Bows, Davidson Director for hip nailing, and a complete line of splints including Thomas Splints, shown in Booth 12, by the J. R. SIEBRANDT MFG. CO., Kansas City, Missouri.

Booths 13, 16 Mine Safety Appl. Co.

MINE SAFETY APPLIANCES COMPANY, of Pittsburgh, Pennsylvania, this year will introduce several new products in its display of safety equipment: M.S.A. Fend Barrier Protection Creams for protection against industrial skin diseases and irritations; Lilly Daché Safety Hats for women workers; Clear-Vue Dustfoe Dust and Mist Respirator; the M.S.A. Comfo Respirator with new Plastic Filter Containers; M.S.A. Goggle Cleaning Station; M.S.A. Tell-Board Bulletin Board; and M.S.A. Salt Tablet Dispensers. Also displayed will be a complete equipment line including instruments for the detection of toxic and combustible gases; dust sampling and counting equipment; canister and hose masks; H-H Inhalator; Foille, popular burn treatment; and protective hats and goggles. Representatives in attendance will gladly discuss safety problems brought to their attention.

Booth 14 Eastman Kodak Co.

EASTMAN KODAK exhibit will consist largely of radiographs on EASTMAN Blue Brand and No-Screen X-ray Film. Those selected will be of particular interest to the industrial physician. Our representatives will be glad to discuss the best processing methods for the various types of films and answer questions regarding their use.

Booth 15 R. J. Strasenburgh Co.

THE exhibit of R. J. STRASENBURGH COMPANY will feature a planned vitamin program emphasizing the need of supplementary vitamin feeding to maintain an optimum vitamin intake.

A brochure outlining in detail the program and its background, together with samples and materials of promotional assistance for carrying out the plan is available at the STRASENBURGH Booth, No. 15. There will be demonstrated the values to be derived from the use of specially fabricated and well-balanced tablets and the relationship of a planned vitamin program in reducing absenteeism.

Booth 17 E & J Manufacturing Co.

E & J MANUFACTURING COMPANY invites the members of the Association to visit booth No. 17 and inspect the latest model of the E & J Resuscitator Inhalator and Aspirator. The automatic breathing machine is accepted by the Council on Physical Therapy and is standard equipment in most of the leading Industrials and Hospitals throughout the United States. A great history of success in the most desperate cases of asphyxia, long years of reliable service, superior performance and construction combine to make the E & J apparatus a truly outstanding piece of equipment.

Booth 18 G. H. Packwood Mfg. Co.

PAX gave industry its first scientifically formulated skin cleanser in 1926. Down through the years our PAX research laboratory has contributed extensively to the advancement of industrial hygiene. Today we are at war. And PAX Safety Skin cleansers have gone all-out for the prevention and control of dermatoses on the production front.

The hands of industry must be kept fit. These are the hands that build the planes, shape the guns, mould the ships and push urgently needed supplies to the corners of the earth. PAX keeps workers' hands healthy, flexible and clean—in prime condition for peak production.

The shift to woman-power has created no problem for PAX. PAX is so mild and bland that *both* men and women use it. PAX exclusive scientific formulation features: (1) pH well below 10; (2) No Free Alkali; (3) Low, controlled Alkaline Salts.

Booth 19 The Alkalol Company

ALKALOL an alkaline, saline solution, for the treatment of mucous membranes and irritated tissues. It is aqueous, contains no glycerine, and only a trace of alcohol.

Especially adapted to eye, nose and throat treatment. Used extensively for flash welding burns of the eyes. Soothing as a wet dressing for minor burns and wounds.

IRRIGOL an alkaline, saline powder. Quickly dissolved in water, it makes a non-toxic, cleansing vaginal douche.

Booth 20 Effervescent Products Inc.

DEMONSTRATING of urine-sugar analysis by the new CLINITEST Tablet Method—reliable, simple, fast, single tests being made in less than one minute. A sensitive qualitative test giving dependable quantitative estimations up to 2%. The same chemical principles involved in the standard copper-reduction methods are the basis of CLINITEST—except—water bath is eliminated as the CLINITEST Tablet itself evolves the required heat.

Booth 21 The Mennen Company

QUINSANA for athlete's foot—a widely-used powder that is effective in both prevention and treatment of fungus infection. Used two ways—on feet and in shoes. Non-irritating. Fungicidal. MENNEN ANTISEPTIC OIL—excellent for use in the treatment of a wide variety of skin diseases and irritations. Also for burns and X-Ray therapy. Antiseptic, sterile, self-sterilizing. MENNEN ANTISEPTIC BORATED POWDER—used wherever a dry, absorbent, antifrictional powder is indicated. Recommended for chafing and other skin irritations.

Booth 22 White Laboratories, Inc.

WITHIN recent years tremendous advances in vitamin research have added a wealth of clinical data to our knowledge of nutrition.

The intense interest of the laity, in the vitamins—often, unfortunately, confused and misled by unauthoritative lay advertising and uninformed "information"—can be properly controlled by the physician's interpretation of the actual usefulness of the vitamins to his patients.

In Booth No. 22 WHITE LABORATORIES, INC., presents its complete line of ethically promoted, clinically reputable vitamin preparations. Qualified representatives are in attendance to discuss with you the use of White's products in vitamin prophylaxis and therapy. Descriptive literature is available for your review, and a cordial welcome awaits you.

Booth 23 Ortho Products, Inc.

THE exhibit of ORTHO PRODUCTS will feature their products for the control of conception. Reprints of published reports of recent clinical studies on the effectiveness of various methods are available.

Industrial physicians are invited to discuss with the ORTHO representatives plans for controlling pregnancy among women workers. Ask for a copy of their new publication "Studies in Human Fertility—Methods for the Control of Conception," which is a review of the present medical knowledge on the subject.

Booth 24 Lily-Tulip Cup Corporation

THE exhibit stresses the importance of pure drinking water and its employee availability for proper industrial health, and maintaining the high standards of sanitation in consumption through the use of LILY-TULIP cups. Safe water supplies can become unsafe through insanitary drinking facilities.

Displaying portable water carriers that are filling a need in various types of construction and manufacturing operations where permanent facilities for drinking water are not available, or where carrying water, salt tablets and vitamin tablets direct to workers assures a better distribution of these items to promote industrial health.

Booth 25 General Electric X-Ray

GENERAL ELECTRIC X-RAY CORPORATION exhibit will tell a war story: How the apparatus is being utilized in many industries, what we are learning, etc. The G-E service plan, which is not a new plan, will be explained to those who are interested. It is our intention to keep our apparatus functioning to the best of its ability so that our users will realize the most use out of their G-E apparatus investment. You are welcome to visit us and discuss any of your problems with us.

Booth 26 Wm. S. Merrell Company

THE MERRELL exhibit will feature a practical, inexpensive approach to industry's No. 1 health problem—the common cold.

Available clinical reports show effectiveness of oral vaccination with Oravax is reducing incidence and severity of colds among industrial workers and other groups. Oravax is painless, convenient, low in cost . . . . ideal for group vaccination.

Now is the time to begin planning protection for your employees during next winter, as vaccination should be commenced during late summer or early fall. Ask MERRELL booth attendants for clinical statistics and a cost estimate for the group under your care.

Booth 27 American Optical Co.

AMERICAN OPTICAL COMPANY will provide a lounge where all visitors to the Conference will be welcome.

Across the aisle from this lounge, AMERICAN OPTICAL COMPANY will display a wide variety of impact-resisting and glare-absorbing safety goggles, welding helmets and handshields, respirators, and other head and eye protection equipment. The exhibit will include modern ophthalmic diagnostic instruments, with special emphasis laid on equipment used by industrial physicians and surgeons.

The Spencer Lens Division of AMERICAN OPTICAL COMPANY will exhibit research and clinical microscopes, haemacytometers, and colorimeters. A number of AMERICAN OPTICAL representatives attending the Conference will be available for answering specific questions and explaining the application and operation of AO products.

Booth 28 Parke, Davis & Company

AT THE PARKE-DAVIS EXHIBIT, which has been streamlined because of present wartime requirements, you will find many new and scientific Pharmaceutical and Biological Products. Included in this display are such outstanding preparations as Phemerol, a non-toxic germicide and antiseptic; Vitamins; Sulfa Drugs; Despeciated Antitoxins; Surgical Dressings, and a number of other products of timely interest. Able and courteous members of the PARKE, DAVIS & Co. Staff are in daily attendance to serve you.

Booth 29 Whittaker Laboratories

COOPER CREME is America's Original Spermicidal Creme, prescribed by physicians for nearly a decade for the control of conception. COOPER CREME appeals to the esthetic sense of fastidious women; will not liquefy or ooze after use and is completely removed with a warm water douche; remains unchanged in any climate, and does not deteriorate with reasonable age, four to five years. Continuous use will not produce any untoward effect or cause sterility. COOPER CREME is available in collapsible tubes and is often applied with the Dosimeter Applicator, accompanying each complete package. Recommended by physicians, hospitals and clinics from coast to coast.

Booths 30, 31 Ritter Company, Inc.

RITTER equipment has gone to war and is, therefore, lacking in numbers from display this year. Single pieces of all RITTER quality equipment which have proved themselves essential to the efficient operation of clinic and private practices, are, however, available for demonstration. The RITTER ENT Unit has all water, air and electrically operated instruments, all medicinal bottles and sprays within arm's reach. The RITTER Motor Chair brings greater operating efficiency to you as well as increased comfort to the patient. The RITTER X-Ray with its shockproof, easily adjusted head for rapid and accurate radiographs; the RITTER Hydromatic Sterilizer with its automatic and labor saving features—are all of particular interest today to the busy doctor and surgeon.

Booths 32 and 33 A. S. Aloe Co.

A. S. ALOE CO. will for the sixth consecutive year be in attendance at the American Association of Industrial Physicians and Surgeons. They will show highlights of their complete line of equipment for the industrial medical department and laboratory including such industrial specialties as the All-Purpose Industrial Chair, the ALOE Magnalite, the Fluro-Plex Inspection Light, the new Sperti developed Biodyne burn ointment, and Tarbonis, a salve for the treatment of industrial dermatitis. The Laboratory Division will feature a working display of modern apparatus for general serological and clinical diagnosis as well as several items of interest to the Industrial Hygienists.

Booth 34 E. R. Squibb & Sons

THE SQUIBB Exhibit in Booth No. 34 will embody preparations of special interest to physicians whose main practice is concerned with the health of individuals in industrial organizations. Recent developments in the pharmaceutical field have made available a number of virtually specific preparations of high value, both in the prevention of disease and in the treatment of industrial wounds.

Booth 35 C. V. Mosby Company

THE C. V. MOSBY COMPANY extends a cordial invitation to visit their Booth No. 35, where many books of timely interest will be on display. Among the more than 100 titles to be shown will be Trueta "Principles and Practice of War Surgery," Key-Conwell "Fractures, Dislocations and Sprains," Herrold "Chemotherapy of Gonococcic Infections," Major "Fractures of the Jaws," Thewlis "Care of the Aged," Parker "Synopsis of Traumatic Injuries of the Face and Jaws," Howles "A Synopsis of Clinical Syphilia," Barnes "Endoscopic Prostatic Surgery," Hawley-Carden "The Art and Science of Nutrition," Top "Handbook of Communicable Diseases," and Turner-McHose "Effective Living."

Booth 36 Zimmer Mfg. Co.

ZIMMER MANUFACTURING COMPANY will show a complete line of Fracture Equipment in Booth No. 36. Among the new items of interest on display will be the Cubbins thumb and finger splints, ZIMMER Reduction and Retention Apparatus, Blount Osteotomy Plates and Accessories, Moore Intertrochanteric Plates, and the Improved Walking heel.

Booth 37 West Disinfecting Co.

WEST DISINFECTING COMPANY plans to exhibit products and appliances to help prevent occupational skin diseases, including a powdered hand soap, protective creams, protective clothing, an ordnance soap and other products along this line.

We intend to exhibit those types of products which will help maintain a normal healthy skin condition and guard against the effects of specific irritants.

Booth 38 Hanovia Chemical & Mfg.

HANOVIA will exhibit the very latest in ultra-violet equipment for industrial clinics, etc., also an entirely new model lamp to irradiate large groups of employees. The fitness and determination of each and every worker are of supreme importance at this time. Without health there is no energy and without energy there is no output. The new HANOVIA ultra-violet quartz lamp helps tremendously in keeping employees physically fit. Don't fail to ask for a demonstration and details.

Booth 39 Wilmot Castle Company

INDUSTRIAL First Aid Rooms and Emergency Hospitals must be adequately equipped today to give quick service. One factor in quick service is safe sterilization and adequate illumination.

CASTLE Lights and Sterilizers are especially designed for this type of industrial work and a complete group will be shown at the CASTLE exhibit in Rochester, Space No. 39.

Booth 40 Camel Cigarettes

CAMEL Cigarettes will exhibit large detailed photographs of equipment used in comparative tests of the five largest-selling brands of cigarettes. Representatives will be available to discuss research. See for the first time the dramatic visualization of nicotine absorption from cigarette smoke in the human respiratory tract. Keep up to the minute on international news with the CAMEL Cigarette Trans-Lux "Flash Bulletins," while you enjoy a supply of slow-burning CAMEL Cigarettes.

Booth 41 Cameron Heartometer

CAMERON HEARTOMETER COMPANY is showing the improved Heartometer, a scientific precision instrument for accurately recording systolic and diastolic blood pressures. It also furnishes a permanent graphic record of the pulse rate, the nervous functioning of the heart, the myocardial strength, as well as the functioning of the valves. The Heartometer clearly reveals heart disturbances in both early and advanced stages and is of great value in checking the progress of medication and treatments.

OUR MEN NEED
★ BOOKS ★

SEND
ALL YOU CAN SPARE

GOOD BOOKS ARE ON THE MARCH from your bookshelves to our fighting men. Get them out—leave them at the nearest collection center or public library for the 1943 VICTORY BOOK CAMPAIGN.

WANTED: Copies of INDUSTRIAL MEDICINE for January, February, and August, 1942; and January and April, 1943. Will pay 50 cents per copy. Send to INDUSTRIAL MEDICINE, 605 N. Michigan, Chicago.

Booth 42 The Bovinine Company

INCREASE PRODUCTION BY REDUCING FATIGUE!!! VITULES, modern multi-vitamin capsules, and Hematinic PLASTULES, iron preparation, highly recommended! Among the real enemies of war production are fatigue, vague ill health, headaches, intestinal upsets, colds, etc. Check your workers' complaints. Vitamin and iron deficiencies may be partly responsible. Meat and food rationing may create additional dietary insufficiencies which may be offset by using nutritional supplements, thus avoiding unsatisfactory production, increased absenteeism and lowered morale and efficiency. VITULES, new multi-vitamin product, and Hematinic PLASTULES, iron preparation, increase stamina and build depleted vitamin and iron reserves. Industrial physicians are invited to investigate these simple, low cost methods of improving their production of war supplies at Booth No. 42.

Booth 43 Spencer Incorporated

RELIEF of Fatigue through Proper Support of Abdomen and Back is the keynote of the exhibit presented in Booth No. 43 by SPENCER Incorporated, manufacturer of Individually Designed Supports. Case histories and pictures will be shown along with demonstration of Supports used for: posture improvement; back strains, sprains and injuries; hernia, ptosis; and obesity.

Booth 44 Bard-Parker Company

THE following products will be exhibited at the BARD-PARKER Booth No. 44: Rib-Back Surgical Blades, Long Knife Handles for deep surgery, Renewable Edge Scissors, Formaldehyde Germicide, and Instrument Containers, Transfer Forceps, Hermatological Case for obtaining bedside blood samples.

Booth 45 Nutrition Research Labs.

NUTRITION RESEARCH LABORATORIES, Booth No. 45, will show a complete new exhibit on arthritis demonstrating the value of Ertron in the treatment of chronic arthritis, through the medium of silent motion pictures, wax moulages, transparencies, and new clinical literature. Companion products displayed will be BEZON, whole natural Vitamin B Complex in capsule form, and PENDRON, the complete vitamin arch.

Booth 46 Philip Morris & Company

PHILIP MORRIS & COMPANY will demonstrate the method by which it was found that Philip Morris Cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representative will be happy to discuss researches on this subject, and problems on the physiological effects of smoking.

Booth 47 Austenal Laboratories

AUSTENAL LABORATORIES, INC., feature surgical and dental appliances made of Vitallium, an alloy of cobalt, chromium and molybdenum. It has been found by surgeons that Vitallium is completely inert in vivo, that it does not irritate the tissues nor interfere with normal bone regeneration, and that it has the requisite strength. In addition to plates, nails and screws for the internal fixation of fractures, Vitallium appliances have been developed for many other uses, and among the interesting items displayed will be skull plates, tubes for the repair of internal ducts, nasal skeletal supports, and caps for arthroplasty of finger joints.

Booth 48 Kelley-Koett Mfg. Co.

KELLEY-KOETT MANUFACTURING COMPANY, x-ray apparatus manufacturers of Covington, Kentucky, will have an interesting display of x-ray supplies, accessories and replacement parts. One of the features of this exhibit will be the KELEKET Conservation Plan—a plan for conserving existing x-ray apparatus by keeping it in top operating condition which is a matter of first importance, especially in these times when the x-ray plays such an important role, not only in medicine but on the production line of many defense plants as well. This exhibit will be in charge of Mr. G. E. Geise, Vice-President, assisted by Mr. Geo. Wm. Finegan, Mr. Wm. Seecombe, of Rochester, Mr. A. J. Barry, of New York, and other representatives.

Blood Donations by War Workers

MEDICAL COMMITTEE,
Industrial Hygiene Foundation,
Pittsburgh

A MEMBER company recently asked Industrial Hygiene Foundation if blood bank drives are desirable in war plants, if blood giving affects absenteeism and production. The Foundation referred the question to members of its Medical Committee. Their replies are so informative, and the question so timely, that the Foundation is making the data available to all member companies and to industry generally. Besides members of the Medical Committee, other physicians commented, including DR. G. CANBY ROBINSON, National Director, and DR. EARL S. TAYLOR, Technical Director, Blood Donor Service, American Red Cross.

—JOHN F. McMAHON,
Managing Director.

Question

THE question has been raised as to whether or not it would be wise to put on an intensive drive in our company to encourage workers to donate blood to the Red Cross bank. . . . We are wondering if the Foundation has data or opinions that bear on such questions as,

1. Has it been clearly demonstrated that the giving of the standard pint of blood has or has not any actual or potential hazards in making a normal individual weaker or more susceptible to colds or other diseases or difficulties?

2. In a plant such as ours, heavily charged with war orders and working on the tightest schedule of shifts, minimum rest periods, etc., has it been shown that widespread blood giving does or does not have an effect on absenteeism and production?

"I have been interested in this problem for some time, and know there are active projects to use gelatin, gum acacia, casein digested by pepsin, pectin, bovine blood albumen and other substances in place of the blood serum or plasma or whole blood transfusion. Is there not an excellent chance that some of these may make unnecessary this wholesale bleeding of the populace? Regardless of your answer to this question we should appreciate the suggestions of the Foundation on our immediate policy."

Answers

REPLY NO. 1: "The question that you have raised as to whether or not it would be wise to put on an intensive drive in a company to encourage workers to donate blood can only be answered by giving you the experiences of our own company.

"We had an intensive drive throughout the plant among both office and shop employees. Out of a total of 3,348 donors, we have had practically no ill results. The Pittsburgh chapter of the Red Cross sent a mobile unit to East Pittsburgh to take care of the scheduled donors from our plant. A ruling was made that shop workers should not return to work until after a two-hour period had elapsed. This ruling was waived for office workers. With the exception of possibly two or three cases that were put to bed in the medical department, the results far exceeded our expectations. Of course, more people of our organization have given blood than were scheduled through the company and of these we have no actual knowledge of results. In checking the absences from illnesses, I find none that could be directly attributed to the fact that they had donated blood. I believe this is brought about, to a great extent, by the careful and methodical check-up that the Red Cross gives to these donors. Those whom we would expect to show ill effects from the giving of blood are eliminated at this preliminary examination. Among our office workers who returned to work immediately, a careful check was made and we found no ill effects. I believe that blood giving does not increase absenteeism or production.

"I, too, have been very much interested in the project of using gelatin, acacia, etc., in the place of blood serum and plasma. However, I have had no experience along this line and cannot speak authoritatively. If I were to express an opinion at this time, it would be that nothing can take the place of blood plasma in convenience, speed and efficiency in combating shock."

REPLY NO. 2: "I note your memorandum to the members of the Medical Committee which concerns a request for information on the wisdom of an intensive drive to encourage workers to donate blood to the Red Cross bank. It happens that one of our Divisions has had some experience with this, and largely on the basis of it I feel justified in expressing an opinion.

1. The workers are glad to contribute blood.

2. It is not necessary for the industry to put on an extensive drive. If they furnish the machinery for obtaining the blood that is all they need to do.

3. If the industry wishes, the local Red Cross people will send a crew into the plant for obtaining blood.

4. Blood should never be drawn before a worker comes on a shift—always after.

5. It is customary to have it done on the worker's time."

REPLY NO. 3: "May I say at the first instance that I accepted the assignment in Baltimore to serve as Chairman of the Red Cross National Blood Donor Project when it was first started in 1941. I believe I can say unequivocally that the idea of the Project is fully justified, and I do not know any way that plasma can be obtained for our troops other than through the arrangement that has been set up between the Army, Navy and Red Cross to procure blood to be processed for the plasma. The introduction of the sulpha drugs to control infection in wounds and the introduction of plasma to prevent or relieve the condition of shock represent two of the greatest advancements of medicine in the field of traumatic injuries. This, of course, applies to military medicine, industrial medicine, and general medicine in the treatment of injuries sustained in public work.

"In those cities where success has been obtained in procuring sufficient blood to meet the needs of the Military Services, the cooperation of industry has been the principal contributing factor in this success. It was my custom to approach the heads of both management and labor to explain the objectives of the Project and in most instances their cooperation was obtained. There is, of course, considerable variation in different industrial plants and wherever possible we sent a mobile unit to the plant to take the blood. In other instances transportation was furnished to bring groups of workers to the Red Cross center. In no instances was any kind of pressure resorted to in connection with getting the workers in any plant to volunteer blood donations.

"In answer to your specific questions . . . , may I say:

1. There are no potential hazards if the standard procedure for drawing blood is followed to the letter. Anyone who is eligible is not made weaker, nor is he made more susceptible to colds or other diseases or difficulties.

2. We have had no experience which permits the idea that either absenteeism or production is detrimentally influenced by the workers taking time out to make a blood donation.

"It is true that workers in medical science are constantly endeavoring to find a blood substitute but as yet such a preparation has not been discovered to replace human plasma. Whole blood transfusion is out of the question in the field or aboard ships. It is my firm conviction that at the present time everyone who meets the requirements for a donor should contribute to this program in order to supply the soldiers and sailors of the military forces with plasma."

REPLY NO. 4: "Based on my experience in the establishment of the Plasma Unit of the Pittsburgh Chapter of the American Red Cross and in personally supervising the first six months of the work I feel I can answer with assurance the two questions propounded by the affiliated company.

1. It has been clearly demonstrated by Red Cross records, backed by almost two years of procurement experience, that the taking of one pint of blood from any person who will truthfully answer the questions and pass the examination given before the blood is taken will suffer in no way or be more susceptible to colds or other diseases or difficulties.

2. It has been definitely shown in many large plants as well as small ones in the Pittsburgh area that it has had no effect on absenteeism or production. . . .

Industrial Dermatitis with its resulting loss of time, is as useful to the enemy as a secret agent! Dermatitis (skin disease) is an occupational hazard—and as such is *preventable*. Two West products will help to prevent this production-wasting scourge.

LAN-O-KLEEN*—the *Hand Soap* that has *proven* its value in helping to prevent occupational skin diseases. Lan-O-Kleen is an effective cleaner that works mildly and without harsh chemical action—leaving the hands feeling better, more fit for work. Lan-O-Kleen is a powdered soap of *mildly* alkaline reaction compounded with granular corn-meal, which has been impregnated (by an exclusive process) with LANOLIN, an oil almost identical to the natural oils secreted by the glands of the skin. Lanolin helps nature to maintain a normal, healthy skin condition.

WEST PROTECTIVE CREAMS

An external protection to help guard your workers from most of the wide variety of skin irritants which may lead to dermatitis. A West specialist will determine which of the many West Protective Creams are best suited for use in your industry. Furthermore, the West laboratories stand ready and prepared to evolve additional formulae to meet special conditions in your plant if none of the standard series of West creams adequately meets the problem.

*Trade Mark Reg. U.S. Pat. Off.

55 BRANCHES • HELPING TO GUARD INDUSTRIAL HEALTH • COAST TO COAST

WEST DISINFECTING *Company*

42-16 WEST STREET • LONG ISLAND CITY • N. Y.

CLIP TO YOUR BUSINESS LETTERHEAD, PLEASE

West Disinfecting Company, Dept. IM, 42-16 West St., L.I.C., NY.
Please send me detailed information on
LAN-O-KLEEN ☐ PROTECTIVE CREAMS ☐
also sample of Lan-O-Kleen ☐

Name..... Title.....

"In view of the fact that all investigations for substitutes have not as yet accomplished their aims and in view of the fact that the Army and Navy through the Red Cross procurement service have received processed plasma packets by the million it would seem that if there was any reaction it would be apparent at this time."

REPLY NO. 5: "The answer to all of the questions is that anyone, except one who is grossly anemic or obviously ill otherwise, can give away a pint of blood without the slightest effect. We have one of the largest Red Cross Donor stations here in Milwaukee. All of our large war plants are encouraging their employees to contribute their blood at two to three month intervals. They have found no decrease in the efficiency of their employees, no increase in colds or other infections, and no increased fatigue as a result of the blood letting. In fact, the psychological effect is a new stimulus to greater effort and improvement in morale, like a 'shot in the arm.'

"As to the question of substitutes for plasma, the answer is that there are none that are anywhere nearly as effective as plasma, particularly for burns. Your inquirer should discuss this with some medical officer who has been at the front and see how far he would get with a talk on plasma substitutes. A medical officer on an aircraft carrier which was sunk has discussed this very subject. The largest number of wounded were burn cases (over 500), of which the mortality was less than 1%, as against a rate of 7% among wounded in World War I. He attributed a great share of this marked improvement in the mortality rate to the prompt use of plasma."

REPLY NO. 6: ". . . . I think it is quite truthful to say that the experience of the Red Cross Donor Service in the past year has shown that there is little or no potential hazard in the taking of the standard pint of blood in the way that he suggests. I think we can give the same answer to the second question.

". . . All the literature coming out shows very clearly that none of them is nearly as valuable as blood serum, plasma, or whole blood. Some of them are definitely out and, while one or two offer some prospects for the future, there is a war on and immediate results are what we need. With the Army and Navy demanding 4,000,000 units this year, and entirely satisfied and even enthusiastic about the results obtained, it seems to me there is little place for argument or disagreement.

". . . Dr. G. Canby Robinson, National Director of the Blood Donor Service, American Red Cross, 17th & D Sts., Washington, D. C., can give authoritative information on any point desired." (See comment by Dr. Robinson.) "It is to be noted that this whole project has been developed under the auspices of the National Research Council, in conjunction with the medical departments of the Army and the Navy and the U. S. Public Health Service."

REPLY NO. 7: "It is firmly established that properly prepared human blood, or the plasma or serum prepared from it, is the most important agent in the treatment of hemorrhage, shock and burns and that it is a life-saving measure in such cases. Whatever the future may develop as to other blood substitutes, that future is sufficiently distant to leave imperative for today's emergency the present Red Cross program for collecting human blood.

"Both experimental studies and the large scale experience with human donor bleedings in this and in other countries have clearly demonstrated that, when donors are selected by the standard rules in general use by the Red Cross, and provided the donor has not become subject to unwarranted fear and apprehension with respect to the procedure, the standard donor bleeding at standard intervals causes no demonstrable impairment of health or of efficiency."

REPLY NO. 8: ". . . . I believe that Dr. Earl S. Taylor, National Technical Consultant, Volunteer Blood Donors' Service, American Red Cross, Presbyterian Hospital, New York, would be about the best authority to answer the questions which have been raised." (See comment by Dr. Taylor.)

"It is my own feeling that none of the substances mentioned, even bovine blood albumen, takes the place of either blood serum or plasma. It would appear absolutely necessary to continue to encourage workers to donate blood to the Red Cross banks. There is no evidence (1) that it makes an individual weaker or is a potential hazard; or (2) has any effect on absenteeism or production in plants. If more than a pint were taken in such donations, these questions might be considered important, but I believe Dr. Taylor would agree with me that one pint of blood is of little consequence in relation to the questions raised."

REPLY NO. 9: "1. I do not believe that giving the standard pint of blood will make a worker more susceptible to colds or any other respiratory infection.

2. I do not believe that giving this amount of blood will increase absenteeism beyond the length of time it takes to act as a donor and the brief rest period which is routine following this procedure. I am assuming of course that routine care including hemoglobin estimations will be used in the selection of donors.

3. In regard to substitutes for human plasma such as gelatin, gum acacia, bovine plasma, etc., I do not have the requisite knowledge to make my opinion of any value."

Comment by Member Company

THE unanimous weight of opinion of your medical consultants in regard to my recent questions regarding the blood bank donors and the need is truly impressive. We feel deeply indebted to the Foundation, and to the individuals who have thus taken the time to share with us their experiences, and desire to express our appreciation of their comments as embodied in your letters of February 10, 15, and March 1. These comments will certainly encourage our full cooperation with the drive that starts locally this week."

Comment by Red Cross

DR. G. CANBY ROBINSON, National Director, Blood Donor Service—"I have read with much interest the statements of the members of your medical committee, and I wish to thank you for the opportunity of reviewing the opinions of such a distinguished and experienced group of physicians. The collected experience of the Red Cross Blood Donor Service which now covers over two million blood donations, fully corroborates the opinions of your medical committee. At the outset of this undertaking, which has now grown to colossal proportions, we made every effort to inculcate three principles in all who participated in the technical operations. The primary one is that the protection of the blood donor is paramount. The second is the protection of the blood. The third is to carry out the project as economically as is compatible with the first and second principles.

"The American Red Cross is expending large sums of money which is freely contributed by the American people in order to procure the blood and to transport it safely to the processing laboratories, where the Army and Navy take it over. The Blood Donor Service represents a great contribution of the American public to the saving of life among our fighting forces, and is to be viewed as an opportunity for the men and women of this country to contribute of themselves toward the relief of suffering and the preservation of life of those who are fighting in our defense. The response of our industrial workers has been magnificent, and it is a source of pride and gratification to us who are engaged in this project that it has been possible and practical to have our great army of workers on the home front do their part as blood donors without impairment of their productive capacity."

DR. EARL S. TAYLOR, Technical Director, Blood Service—". . . From the very beginning our chief concern has been adequate protection of the donor and all our rules and regulations have been based on this primary concept. As you probably know the donor requirements are uniform throughout the nation. Donors are interrogated and examined and bled in exactly the same manner in all of our 30 centers. To date we have taken over 2,000,000 pints of blood and are pleased to say the accident rate has been an unbelievably negligible figure. We believe this is due to two factors:

1. A certain amount of self-selection on the part of the donors; and

20 MILLION HEALTHY HANDS

APPLAUDED PLY IN 1942

If a disabled workingman means a disarmed fighting man, then by the same reasoning, the use of PLY *armed* millions of soldiers—by reducing enormously the number of cases of disabling dermatitis in American war industry.

This is not mere braggadocio, but documented fact. Too, it's an invitation for thousands of other war plants to join this year in fighting the menace of occupational skin disease by preventing it the clinically developed, proved-in-use PLY way!

What Is PLY? It is a series of formulae (a different formula for each general skin hazard) which acts as an invisible glove between skin and irritant.

How Is PLY Used? The cream (or liquid, if you prefer)is spread on the hands *before* work, an invisible barrier to irritants. After work PLY washes off with water.

Write for Free Booklet

The "ANSWER TO INDUSTRIAL DERMATITIS"

THE MILBURN CO.

3246 E. WOODBRIDGE • Detroit, Michigan

2. The rather rigid donor requirements from which we do not deviate.

"A very large percentage of our blood is collected from groups in industrial plants. To date we have not had reported a single accident of major proportion. We have made it a general policy not to bleed any industrial workers who must return to work with dangerous machinery within eight hours after their donation. Even though at the most 1% of the people have delayed syncope, this added safety factor, I believe, has proved its worth.

"Two or three factors I think speak for themselves regarding the normal individual's reaction to giving a pint of blood. Our repeat donors run from 50 to 75%. Furthermore, 10,000 consecutive donors were given follow-up cards in one large city. Of the 76% who replied only 0.9% noted upper respiratory infections in the week following donation. This was lower than the actual prevalence of the condition in that community during the time the study was made. About 2% of the same group of people did complain of some lassitude or weakness for 48 hours after giving their blood. It must be remembered, however, that a good percentage of these people are sedentary indoor workers and housewives.

"I am happy to say that except for one or two incidents where it was obvious that certain groups within the plant were taking advantage of their having given blood there has been no significant instances of absenteeism related to the Blood Donor project.

"At this writing none of the substitutes suggested is considered worthy of recommendation by the National Research Council for use in the treatment of shock by the armed services. Although investigation is continuing on those few that seem feasible it would seem that no satisfactory blood substitute other than that of human origin will be available for use before the termination of the war.

"I gather that your medical committee's response on the whole had been most favorable. I realize the profound influence that a report from your Foundation would have on industry as a whole and it is gratifying to know that we have had your support."

The Role of Dentistry

— In an Industrial Medical Program —

ERNEST GOLDHORN, D.D.S.,
Dental Surgeon,
Pullman Standard Car & Manufacturing Corporation

THE entire premise of an industrial dental program is that it must be an integral part of a well organized industrial health effort. The purpose and fundamental axiom of such a program is "To keep men on the job," to increase industrial efficiency, and enhance industrial safety. It must have the whole hearted support and become an essential part of industrial medicine.

Industrial medicine recognizes and appreciates the important task dentistry can accomplish in elevating the industrial health level, in reducing absenteeism and time loss, and in increasing the efficiency of the industrial worker, by eliminating the drag on slowdown caused by dental infection, and the restoration of oral health.

The industrial medical examiner is keenly aware of the scope and magnitude of the oral health problem; with the aid of only a tongue depressor he finds that over half the mouths he sees have extensive oral pathology, and understands full well the disastrous effects cumulative dental infections have upon the health of the worker.

That the development of a comprehensive dental program for industry, desirous as it may be, cannot be attained, should be obvious to any interested observer. The very magnitude of the problem will limit its approach to only a segment. This segment should be part of an industrial health program and concern itself primarily with the diagnosis, treatment, and eradication of dental sepsis, the treatment of acute and painful dental lesions, industrial injuries, limited prophylaxis, oral hygiene and dental health education.

It is my considered opinion as well as that of my industrial medical confreres that all phases of restorative dental procedure should be relegated to the private practice of dentistry and to the practitioner of the worker's own choice.

Presented at a meeting of industrial dentists, Chicago, February 22, 1943.

British Method of Blanketing a Casualty

THE British (Wanstead) method of blanketing casualties mentioned in Circular, Medical Series No. 20, U. S. Office of Civilian Defense, is given herewith. Using two blankets as described, there are four thicknesses beneath the patient and two above. The feet are tucked in and kept warm by the use of this technic, and the head is protected against cold. When the blanket fold is completed, it securely fixes the extremities and trunk so that it can be used as a blanket carry, if necessary.

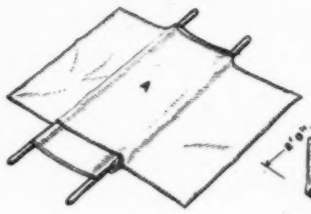


FIGURE 1

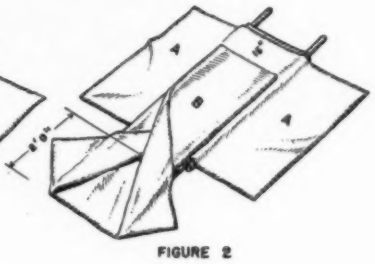


FIGURE 2

Preparing the Stretcher

PLACE blanket *A* lengthwise across the stretcher with one side close to the head end of the stretcher, and one end of the blanket having a slightly longer overlap of the stretcher than the other end (Fig. 1).

2. Fold blanket *B* in thirds lengthwise and place over *A*, the upper edge of this folded blanket about 15 inches below the upper edge of blanket *A* (Fig. 2). For very tall persons it is necessary to lay blanket *B* farther down on the stretcher to permit its lower end to extend a sufficient length below the patient's feet so that it may be folded up and around them in the manner to be described.

3. Open the folds of blanket *B* for about two feet at the foot end (Fig. 2).

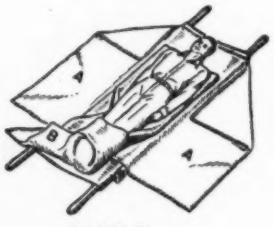


FIGURE 3

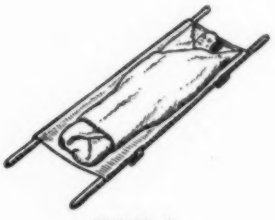


FIGURE 4

Wrapping a Patient

BRING the foot of blanket *B* up over the feet, with a small fold between the feet.

2. Tuck the two open folds of blanket *B* closely over and around the feet and ankles (Fig. 3).

3. Turn in upper corners of ends of blanket *A* (Fig. 3), wrap shorter end of blanket *A* over patient and then the longer end and tuck well in at side (Fig. 4).

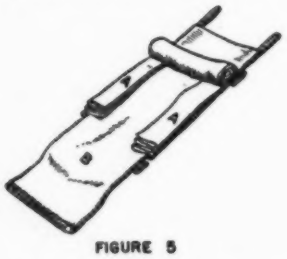


FIGURE 5

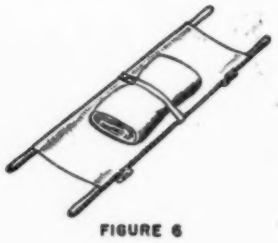


FIGURE 6

Blanket Assembly for Transit

PROCEED as under 1 and 2 for preparing a stretcher.

2. Fold in the two ends of blanket *A* in accordion pleats (Fig. 5); fold in the foot end of blanket *B;* then roll the blanket and make secure (Fig. 6). A hot water bottle placed in the center of the blanket pack will keep it warm.

Not Merely Vitamins...

A BALANCED RATION OF ESSENTIAL NUTRIENTS

The revelation that nutritional deficiencies of varying severity are prevalent among our population is of special significance to the industrial physician. A poor nutritional status exerts a direct influence upon physical capacity and efficiency, upon stamina, and consequently upon accuracy of work.

New Improved Ovaltine offers a wide range of applicability in the prevention as well as in the correction of nutritional deficiencies. Usually these subclinical states require more than merely the administration of vitamins. Two or three glassfuls of this delicious food drink raise the nutritive level of virtually any dietary to optimum levels. Not only is it an excellent source of vitamins A and D and the B vitamins, but it also supplies abundant amounts of biologically adequate proteins, needed minerals, and caloric food energy.

Ovaltine, served as a hot or cold beverage during rest periods and the lunch hour, can prove highly effective in raising over-all industrial efficiency and output. The Wander Company, 360 North Michigan Avenue, Chicago, Illinois.

2 KINDS
PLAIN AND CHOCOLATE FLAVORED

NEW IMPROVED
Ovaltine

Three daily servings (1½ oz.) of New Improved Ovaltine provide:

	Dry Ovaltine	Ovaltine with milk*		Dry Ovaltine	Ovaltine with milk*
PROTEIN	6.00 Gm.	31.20 Gm.	COPPER	0.5 mg.	0.5 mg.
CARBOHYDRATE	30.00 Gm.	66.00 Gm.	VITAMIN A	1500 U.S.P.U.	2953 U.S.P.U.
FAT	3.15 Gm.	31.5 Gm.	VITAMIN D	405 U.S.P.U.	432 U.S.P.U.
CALCIUM	0.25 Gm.	1.05 Gm.	VITAMIN B_1	300 U.S.P.U.	432 U.S.P.U.
PHOSPHORUS	0.25 Gm.	0.903 Gm.	RIBOFLAVIN	0.25 mg.	1.28 mg.
IRON	10.5 mg.	11.9 mg.	NIACIN	4.95 mg.	7.1 mg.

*Each serving made with 8 oz. milk; based on average reported values for milk.

"------CLEAN AND INFECTED WOUNDS OF ALL TYPES------ NEW AND OLD BURNS---"

GADOMENT
(Patch)

The Original American Cod Liver Oil Ointment

In reporting on the use of cod liver oil therapy in wounds and burns, Hardin* gives its advantages as:

Sterile and bactericidal
Stimulating to granulation and epithelization
Accelerates liquefaction of dead tissue
Produces beneficial local and systemic response

Some of the important therapeutic uses of local application of cod liver oil were found to be:

Extensive crushing or destructive injuries
Major primary burns
Large infected wounds
Extensive ulcerations from burns or other causes

GADOMENT (Patch) is a bland, cod liver oil ointment providing an even spread; does not seep through recommended dressing.

Send for copy of booklet "Common Skin Lesions."

For the first aid kit: GADOLETS—small, convenient gelatin applicators containing Gadoment.

*Hardin, P. C.: The Southern Surgeon, 10:301-338 (May) 1941

THE E. L. PATCH COMPANY
BOSTON, MASS.

Industrial Medical Conference

—Abstracts of Papers at the Post-graduate Industrial Medical and Surgical Conference, Detroit, April 8—

Reported by

C. O. SAPPINGTON, M.D., Dr. P.H.

SPONSORED by the Committee on Industrial Health of the Michigan State Medical Society, in cooperation with the Department of post-graduate Medical Education of the University of Michigan, and also the War Conference of the General Motors Medical Directors, a most interesting post-graduate industrial medical and surgical conference was held at the Rackham Memorial Building, Detroit, on April 8, 1943. The conference was well attended, and the discussions were spirited and productive of a great deal of excellent material.

Among the features of the program were round-table discussion groups on specific subjects of interest to industrial physicians and surgeons, and a symposium on the employment of handicapped workers.

The program follows:

Morning

PRESIDING CHAIRMAN: H. H. CUMMINGS, M.D., Ann Arbor, President, Michigan State Medical Society.

"The Present Status of Medical Programs in War Industries"— J. G. TOWNSEND, M.D., Medical Director, Division of Industrial Hygiene, National Institute of Health, Bethesda, Maryland.

"Study on Minor Burns"—R. D. MCCLURE, M.D., Surgeon-in-Chief, Henry Ford Hospital, Detroit.

"The Employment of Women in Industry"—MAX BURNELL, M.D., Medical Director, AC Sparkplug Division, General Motors, Flint.

"Industrial Hygiene in the War Industries"—J. J. BLOOMFIELD, Chief, State Relations Section, Division of Industrial Hygiene, National Institute of Health, Bethesda.

"Industrial Illness and Disability Analysis"—ANDREW T. COURT, Labor Economics Section, General Motors, Detroit.

Luncheon Session

ROUND TABLE Discussion Groups—Horace H. Rackham Educational Memorial Conference Rooms:

"Heart Disease in Industry"—Discussion Leader: HERMAN H. RIECKER, M.D., University of Michigan, Ann Arbor.

"Dermatitis in Industry"—Discussion Leader: LOUIS SCHWARTZ, M.D., Medical Director, Office of Dermatoses Investigation, National Institute of Health, Bethesda.

"Management of the More Common Industrial Fractures"—Discussion Leader: B. J. HEIN, M.D., Toledo, Ohio, Chairman, Industrial Health Committee, Ohio State Medical Association.

"Traumatic Eye Injuries and Epidemic Kerato-conjunctivitis"—Discussion Leader: PARKER HEATH, M.D., Professor of Ophthalmology, Wayne University College of Medicine, Detroit.

"Back Injuries—Medical Legal Complications"—Discussion Leader: CARL BADGLEY, M.D., Professor of Orthopedics, University of Michigan College of Medicine, Ann Arbor.

Afternoon

PRESIDING CHAIRMAN: C. D. SELBY, M.D., Detroit, President, Michigan Association of Industrial Physicians and Surgeons.

"Dermatitis Due to Cutting Oils and Cutting Compounds"—LOUIS SCHWARTZ, M.D., Medical Director, Office of Dermatoses Investigation, National Institute of Health, Bethesda.

Symposium on the Employment of the Handicapped Worker:

(a) "Mental and Psychological Problems Relative to Industrial Employment"—FRANK F. TALLMAN, M.D., Director of Mental Hygiene, Michigan State Hospital Commission, Lansing.

(b) "The Employment and the Evaluation of the Handicapped Worker in Industry"—E. P. CHESTER, Director, Bureau of Rehabilitation Service, State Department of Education, Hartford, Connecticut.

Discussion:

1. "Medicolegal Phases of Industrial Employment"—L. J. CAREY, General Counsel, Michigan Mutual Liability Insurance Company, Detroit.
2. "Viewpoint of the Michigan Department of Labor and Industry"—JOHN W. GIBSON, Chairman, Michigan Department of Labor and Industry, Lansing.
3. "Viewpoint of the Employer"—JOHN LOVETT, General Manager, Michigan Manufacturers Association, Detroit.
4. "Viewpoint of the Medical Profession"—C. M. PETERSON, M.D., Secretary, Council on Industrial Health, A.M.A.

Banquet

HORACE H. RACKHAM Educational Memorial, Detroit: Speakers:

HONORABLE HARRY F. KELLY, Lansing, Governor of the State of Michigan.

CHARLES F. KETTERING, Vice-President in Charge of Research, General Motors, Detroit.

CHAIRMAN MARKUSON mentioned at the opening of the meeting that there were three groups represented—the Michigan Association of Industrial Physicians and Surgeons, the Medical Directors of General Motors Corporation, and the Michigan Industrial Hygiene Society.

Comments were made on the Michigan law with reference to increasing the benefits of compensation to six

months and the possibility of waiver regulations being passed for dusty lung diseases—the waiver permitting up to 120 days of grace following enactment of the bill. It can easily be seen, therefore, that medical programs of this type are very important.

The presiding chairman, DR. H. H. CUMMINGS, President of the Michigan State Medical Society, gave the address of welcome and particularly stressed the importance of the change-over into wartime conditions and the attendant problems of housing, transportation and others which have been well met in the state by public health officers. New hazards in industry will present problems for solution, as will also the lack of adequate medical personnel. The problems of women, both personal and medical, will give considerable concern to many employers, as well as the wider use of older employees. All of these things must receive due consideration by the medical profession and by employers generally.

DR. J. G. TOWNSEND, in presenting the subject "The Present Status of Medical Programs in War Industries," commented from Osler to the effect that it is useful from time to time to take stock of various situations and find out where you are.

The difficulties in giving adequate information with respect to war production and its relation to health are realized, but certain surveys made in 1942, particularly with respect to industrial nursing, covered two and one-half million employees in 36 states and were concerned with war activities and medical services. It is important to note that all but five of the 160 plants surveyed stated that the health services were paying propositions.

It is particularly interesting that plants with 4000 persons or over find it economical to x-ray their employees for early diagnosis of tuberculosis; by using small films, the cost is approximately 12 cents per worker. In the 160 plants surveyed, x-ray equipment was found in 3% of plants under 1000 employees, in 8% of plants from 1000 to 3000 workers, and in 52% of plants over 3000 employees.

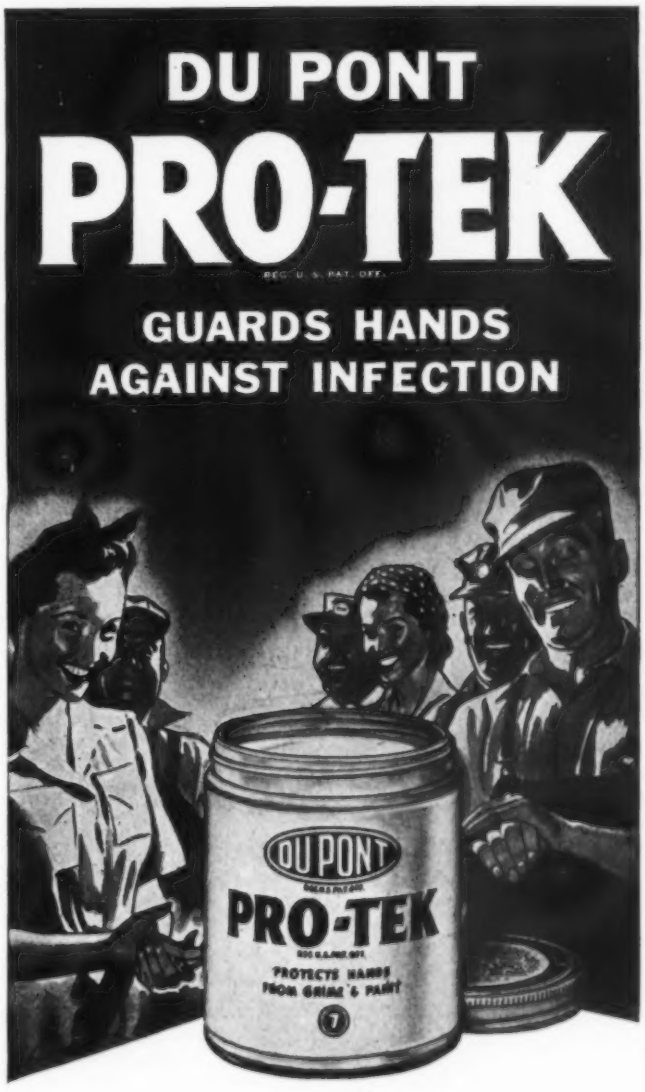
Venereal disease control programs have become outstanding through serodiagnosis plus proper examinations, laboratory procedures, treatment by family physicians or clinics. The rates have been found to be as follows: 2.4 among whites, and 27.2 among negroes in the general population. (The industrial rate probably averages around 3.5 as compared with 4.8 in the general population in 44 states.) In 77 plants one-third rejected all positive reacters, but two-thirds of this group of plants employed such positives if there were no contra-indications.

Nutrition in industry is now getting its needed attention which it has lacked for some time. Rationing may produce certain difficulties in the problem of providing food at war production plants.

Immunization should be routine for smallpox, particularly in those who have a vaccination scar which is five years or more in age, and vaccination can be arranged as a part of the pre-employment examination. Immunization against typhoid probably is not necessary for most industrial employees.

In the streamlining of medical services in industry good use should be made of the doctor's time. Surveys have shown that full-time physicians are employed in 2½% of plants of 500 employees and under, which is raised to 90.6% in plants of 10,000 employees and over. There are many physicians on part-time basis and on call. It is well to remember that, to be essential, an industrial physician must give more than 40 hours a week to essential industries.

Preplacement examinations should be used more commonly for the proper utilization of services of employees —men over 40 should be used more and more, and will be. The average has been about 7% for rejections, varying from 0.7 to 16%, based on an experience of 84,000 examinations. Requirements for employees should be based on the job, and standards should be adjusted so that more men can be utilized. Time-saving devices should be used on examinations by the use of aides and technicians. The past personal history is not considered so important as formerly, but a complete occupational history should still be used. There should be no relaxation with reference to periodic



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examinations and industrial hygiene relationships, but these should be streamlined. Nurses and technicians can help.

Standing orders in 36% of plants have been issued for nurses' use. The A.M.A. is preparing standing orders now as a pattern for future use.

The importance of post-graduate courses was emphasized—these have now been established in various portions of the country and have been widely attended.

In closing, the speaker stated that Michigan was in a very strategic position and that it had the greatest number of war contracts of any state. Moreover, the fact that DR. MARKUSON, who is Chief of the Division of Industrial Hygiene of the State Department of Health, is also Chairman of the State Committee on Industrial Health of the Michigan Medical Society is the only instance of such a tie-up in the whole country and certainly puts the state in a favorable position.

DR. R. D. MCCLURE presented an important subject, "Study on Minor Burns."

The statement has been made that 90 million man-hours were lost during the past year because of burns. It is also realized that burns are an insignificant cause of absenteeism in industry, but it is important to know the status of minor burns.

It was possible through the cooperation of DRS. SELBY and PRENDERGAST to make an analysis of a group of 7000 burns in a three-month period, coming from three different automobile manufacturing companies. These were minor burns, only seven cases losing a day from work or because of hospitalization. There were no deaths.

Although there was no standard of treatment in these burns, 84 different methods of treatment were used, including 84 different types of compounds. Lantern slides were shown, naming these different preparations.

Tannic acid may have a toxic effect and is usually not of any great use in small burns. Infection is common after the use of tannic acid.

The objects of treatment of minor burns should include the relief of pain and discomfort; prevention of disability; the favoring of early healing; and the prevention of infection.

It has been found that a lubricant dressing is best adapted to small burns.

Rather than to call burns, first-, second- and third-degree, a better classification seems to be superficial and deep.

As to treatment, there is apparently now a swing to greasy ointments. Koch's method of cleansing a burn and putting on a vaseline gauze with a pressure dressing was cited and described.

There is no conclusive proof with respect to cod liver oil and vitamin ointments being better than vaseline gauze.

In summary, this survey has shown that we do not really know how to treat minor burns, and it would be of distinct advantage to cut down the number of drugs used. The following facts have been brought out: (1) there has been an unreasonable number of types of treatment used; (2) there have been many exaggerated and untrue claims for some of these preparations; and (3) minor burns are apt to heal in less than a week regardless of the treatment used—however, the essayist would advise (a) washing with white soap and warm sterile water with the use of soft cotton tufts; (b) the use of vaseline gauze or boric ointment gauze and a dressing; and (c) a fairly bulky pressure dressing over that.

DR. MAX BURNELL discussed "The Employment of Women in Industry," stating that women have come to be considered as a bright spot in the industrial development of modern times. Recent statistics have shown that of 1900 occupations, 331 are not considered adaptable to women. Recent figures have also shown that there are now over four million women being used in war industries.

As to the type of work which women can do, DR. C. D. SELBY has listed the experience of a large plant which indicated that females have been successfully employed on bench work, assembly, inspection, conveyor-loading (small parts), packing (small parts), sanding, stripping, paint-

spraying, spot-welding, light punch press, small drill press, tapping, milling, riveting, and brazing.

As to hazards, it often has been stated that women are more susceptible to the various types of industrial poisons than men; however, with the proper industrial hygiene program and supervision, employment of women can be safely done even with the ordinary types of exposure.

The essayist agreed with DR. C. O. SAPPINGTON with respect to requisites during examination—(1) the examiner should understand the type of exposure into which the prospective employee is going or has been; (2) he should also know what effects are ordinarily experienced by such exposures, how they are expressed by the human body, and what effects they may have upon each individual examined, particularly with relation to defects or conditions noted; and (3) he should know the methods of protection which are used on the occupations in which employees will be placed and as to whether these protective methods are functioning properly.

In examining women, all should be examined thoroughly, but a pelvic examination is not routinely made. The examination is done after the prospective employee has donned a special gown, and a nurse is always in attendance.

It is important to do chest x-rays of women employees because of the higher rates for tuberculosis among women, and also it is important to remember free silica exposures. DR. ALICE HAMILTON has named a considerable list of irritants of the pulmonary tract.

Suggestions were made for a day-by-day service, including examination of all new employees, industrial toxicology and hygiene services, checking older employees by health cards, and a daily consultation service.

Measures to lessen lost time in sickness consist of (1) dispensary services for minor illnesses; (2) contact with family physician on cases where necessary; (3) house visits by the nurse; and (4) rehabilitation of returning cases by putting them on special light work and other similar measures.

It is to be emphasized that the medical department, particularly with problems of women in industry, should function as a fact-finding agency.

Of the special problems, there are dysmenorrhea, menopause and pregnancy. Dysmenorrhea may present a real problem in some instances. Usually 60 to 75% of the cases show minor disturbances, while the other 25 to 40% require considerable treatment and surgery. Most of the cases can return to work within a period of one to two hours after being given a sedative, hot water bottle and rest. In a large plant, it was shown that in a group of 6000 persons lost time was reduced 65% by these measures. Treatment by personal physician is emphasized.

In menopausal problems, assistance in adjustment to occupation and treatment by the family physician appear to be the important measures.

The problems of the pregnant women in industry have been much emphasized of late and many groups have made suggestions about care during employment. We should realize, however, that there are certain fundamentals: (1) it is not necessary to use pregnant women in industry; (2) when an employee becomes pregnant, she should report to the medical department at once; (3) there should be no exposure to toxic substances; (4) facilities for adequate prenatal care and information should be developed and used; (5) there should be no night work by pregnant women, and the limit of day work should be 40 hours a week; (6) there should be a minimum of six weeks' leave before birth and also after birth. It should be realized that the adequate care of the pregnant employee is one of the main problems concerning the employment of women in industry.

A counselor service has been found to be of great value and a real factor in the emotional adjustment of women employees. Likewise, a matron service has been found to be helpful, and both of these services together appear to be the only logical basis for a real health maintenance program for women in industry.

As to hours of work, the legal regulations vary greatly in different states—for example, Tennessee permits a 10-hour day for women. Mettart quotes Bonfield as saying

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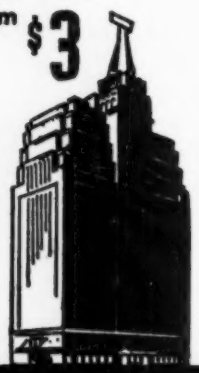


IN THE CENTER OF MID-TOWN NEW YORK

that the British experience has shown that women are not able to maintain good working efficiency if they work more than 43 hours a week. It has been stated that the maximum number of hours per week should be five hours less than the maximum for men. There should be 5% personal rest period allowances and 10% fatigue allowances for women.

Among the other working conditions that are important are posture and seating; and the provision of foot rests for high type chairs, restrooms, showers, and state regulations on toilets, cots, and other matters should be looked into by all employers who have women on their payroll. The matron supervision is very important.

Mary Anderson has called attention to what may be designated a "design for safety" for women's clothes, which should be neither too tight nor too loose; no jewelry should be worn; there should be no loose hair; low heels may well be used. There is a difference of opinion on the use of uniforms.

In closing, women have a very definite place in our war effort and, when used in industry, the physical examination should be thorough; accurate information should be secured with reference to the employment of women in industry; a full health program should be followed; women in industry constitute a big war problem.

MR. J. J. BLOOMFIELD presented the subject "Industrial Hygiene in the War Industries," stating that there has been a metamorphosis overnight in war industries, with great variations in advances made in different places.

The control of processes, materials and equipment is most vital in cutting down casualties. There certainly is more information now to work with than there has been in the past, and also 38 states and other local agencies are able to help in the various industrial hygiene problems.

Certain trends may be observed—conversion has been difficult in many instances, but there have been many new replacements.

It is feasible to consider the problems under the headings of machinery, materials, and men.

In the present program, there is a greater amount of machines and parts to make and a greater number of materials to be used—so that health is likely to be "lost in the shuffle"; moreover, there is less maintenance and also there is no knowledge of the hazards of certain types of materials. It is, therefore, necessary to survey things used.

Among the processes, sand-blasting continues to offer an increased hazard to silicosis; although sand-blasting can be safely done, it is not always so arranged and may be sidetracked in the haste of production. Substitutes for sand may also offer difficulties of use or hazards. It is important to control the dust at the source.

The use of x-rays for testing purposes and the use of radium on a wider scale may make it necessary to consider protective measures against personal injuries from these substances. Moreover, it is certainly necessary to avoid a repetition of the California episode where considerable injury was done to a group of employees who were viewing bones under x-rays—the exposures causing the difficulty.

Noise continues to be a problem, coming up particularly in airplane testing; in certain localities noise reduction has been possible, accompanied by special examinations of employees exposed.

Of some of the materials used, manganese, methanol, fluorine, and lead may be mentioned as being important.

In Michigan, in a survey of 405 plants, grinding, buffing, welding, carbon monoxide, silica exposure, plating solutions, and cutting oils represent certain important problems. It has been stated that about 600 milligrams per 10 cubic meters of all types of welding fumes represents the upper limit, before a problem is presented so far as steel welding is concerned. Tank welding presents an exposure to fluorine and chromium, but it is doubtful if the form of chromium would be harmful. The concentration of fluorine should be under one milligram per 10 cubic meters. Experience has shown that in certain steel metallizing processes, carbon monoxide may run as high as 500 parts per million.

At the present time a study is being made of magnaflux and its use in wartime industrial production.

Radium dial painting must be watched and controlled, if

it is to be done without trouble. Fluorescent materials must be carefully used also. It must be remembered that luminous paints may be injurious after application.

Certain difficulties have also been experienced with chlorine compounds used in fabric proofing, exposure to these having caused systemic disease.

As to the third item in the list, men, we must include all types of industrial hygiene work. It is important to consider many different types of industrial health problems; however, wartime problems should offer no more difficulties than those which have been encountered in peacetime, but the former appear merely more prominent.

There will be future problems in medical care, housing, postwar nutrition, and others, but there will be no real solutions unless planning is done for the application of preventive measures on a teamwork basis.

Top management should be actively contributing to all of these questions; workers should also realize their responsibility. Such teamwork will be a great help in all war production units.

MR. ANDREW T. COURT gave the last presentation on the morning program on "Industrial Illness and Disability Analysis."

There has been an increase of 10% mainly in respiratory disabilities, and pneumonia has about doubled during the past year. Female rates have increased 70 to 100% as compared with the rates in men.

The experience for the past 18 months shows that there has been no change in sicknesses of over one week's duration. Short-time absences have been greatly increased; 80% are due to illness. Most of the short-time absences pile up on days after payday and on Mondays. About 40% of the short-time absences are noted in 40% of the employed group.

Absences are inversely proportionate to age—that is to say, the long-time absences occur in great frequency in persons of 60 years and over, and the short-time absences occur in greater frequency in persons under 30 years of age.

As to weekly trends, the high points are reached during the deer hunting season, at Christmas, Thanksgiving, Labor Day, and so on.

At the present time, lost time is produced by non-occupational disability to the extent of approximately 3% of the total number of employees engaged; non-industrial accidents 0.1%; occupational accidents 0.1%, and occupational sicknesses negligible,—this is the General Motors experience.

Apparently the absenteeism at the present time is restricted mostly to a small group, and it may help to counsel with them as to the control of this difficulty.

Round-Table Discussion

THERE were a number of round table discussion groups as the program will show, the reviewer attending the one conducted by DR. PARKER HEATH, as Discussion Leader on the subject "Traumatic Eye Injuries and Epidemic Kerato-conjunctivitis."

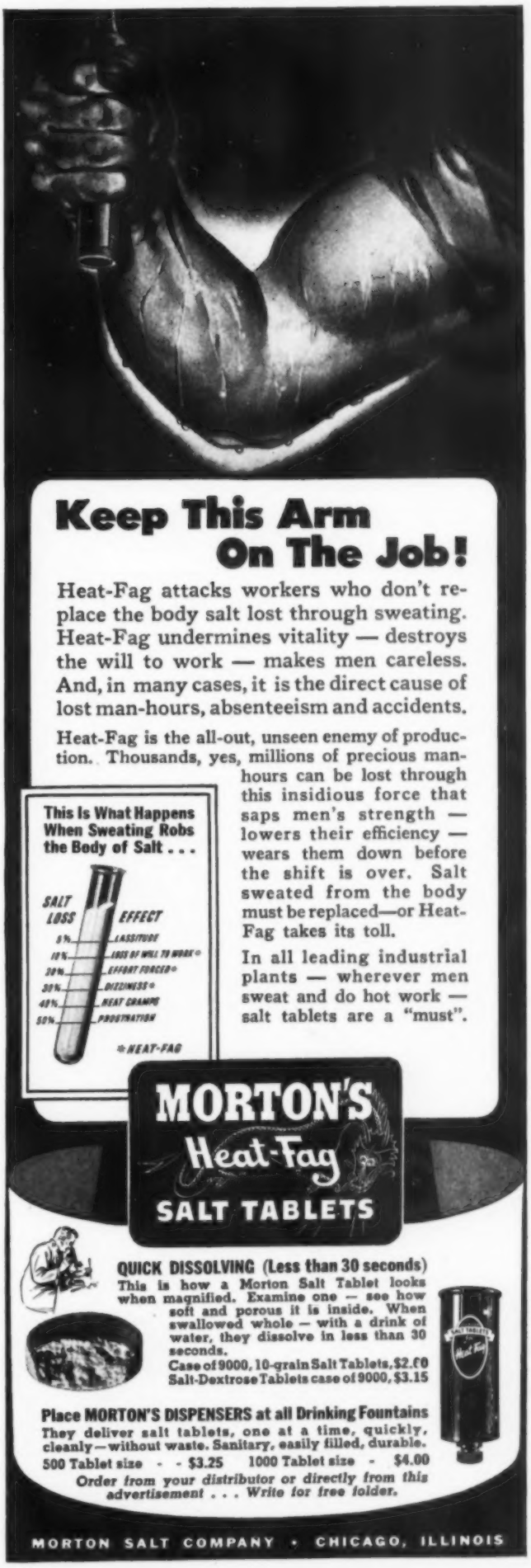
DR. J. G. MOLNER, of the Health Department, first presented a brief discussion of epidemic kerato-conjunctivitis, which was followed by DR. HEATH'S brief presentation on traumatic eye injuries.

Epidemic kerato-conjunctivitis is a communicable disease —there is a question as to whether it is really an occupational disease. Although not primarily industrial, it affects the health of industrial workers. The industrial attack rate is approximately 5%; this is no greater in industry than in families.

The disease was first recognized in the Orient, then appeared on the west coast, was later found in the east, and is now found in the middle-west areas.

Sanders has isolated a virus from active cases, but it is not settled as to whether this virus constitutes specific etiology. The host, however, develops immunizing bodies.

The early symptoms are those of a scratching sensation, tearing, conjunctivitis, edema of all eye structures. These symptoms appear in 24 to 48 hours, and in 80 to 85% there is a pre-auricular lymphangiitis. There is also a marked folliculitis. Cultures have been negative. Many develop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[1]Tsuchiya and co-workers. Proceedings of Society of Experimental Biology and Medicine, Vol. 51, page 245 (Nov. '42).

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THE MIND OF THE INJURED MAN

A Study of Trauma and the Nervous System, with Particular Reference to Neuroses Associated with Injury

by

Joseph L. Fetterman, M.A., M.D.,
Assistant Clinical Professor of Nervous Diseases,
Western Reserve University School of Medicine,
Cleveland, Ohio

Foreword by Foster Kennedy

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opacities (28 to 85%), some persisting for as long as a year.

This is an acute communicable disease, which breaks out sporadically, and probably has a higher incidence of actual carriers than now realized.

Approximately 5% of exposed persons develop the disease. In the history of the ratio of persons developing to those of controls, 2.4 times as many having the disease had foreign bodies in the eye as the controls—2.1 times as many had worn goggles as the controls—and 4.4 times as many of those having the disease had visited an eye clinic within 14 days of the onset as had the controls.

It is thus seen that this is predominently a contact disease. A "closed" communicable disease technique lowers the incidence of the infection. Rigid aseptic measures should be used always in contacting or treating these cases.

There is an incubation period of five to 12 days. Fomites probably are not important, although it is possible to convey the infection this way. Person-to-person contact seems to be more important.

As to treatment, sodium sulphathiazole sesquihydrate has been used, but not in the experience of the essayist. Cold compresses and boric irrigation for comfort seem to help. Convalescent serum seems to need further investigation as to its specificity. Patching the eye is not considered good technique, although cotton has been employed under the eye to catch the tears. Recently there has been used in six cases which have now been declared recovered, a preparation of 30 milligrams percent of gramicidin (Parke-Davis) which is an extract of bacillus brevis—this being used as a bacteriophage principle. The six cases in which this was used were declared to be recovered in three to six days—it usually taking five days to several weeks for the infection to clear.

In conclusion, it was stated that of the 161 cases seen in Detroit, approximately 40% developed opacities.

DR. PARKER HEATH concluded the discussion at this roundtable by a discussion of industrial eye injuries. In the preventive program of health education in industry, great service can be rendered by the correction of false notions and included in this, of course, are false notions as to good hygiene of the eye.

In pre-employment examinations in hiring individuals, it has been shown that 15% will show defects; 5% of these are serious; 10% are moderately serious. Eye examinations should include muscle balance, depth sense, and color appreciation, as well as near and far acuity, done with consideration of relationship to the job.

In a large plant experience, the average for abnormal visual acuity was 20%, with 23% of those showing lost time accidents; for depth perception 14% and 17.3%, respectively; for color appreciation 3.1% and 9.6,% respectively, and for muscle balance 16% and 19.2%, respectively.

Examination work can be done by technicians who are supervised by medical men. Thus the time of the medical men can be properly used and adequately spaced.

Dry sterilization of goggles was recommended—by wrapping in brown paper and putting into the sterilizing units. The use of goggles should be obligatory any place where there are processes involving flying particles.

It is interesting to know that less than 100 persons were blinded in World War I—this is a very remarkable record.

In conclusion, it was stated that the chief cause of the loss of sight in accidental eye injuries is corneal scarring. Therefore methods should be directed toward prevention of this type of accident and its complications.

Afternoon Session

DR. LOUIS SCHWARTZ, in his presentation "Dermatitis Due to Cutting Oils and Cutting Compounds," gave an excellent resume of the subject, illustrated by colored lantern slides of different skin lesions.

Industrial dermatitis is the most frequent occupational disease, and cutting oils are the most prominent factors in the causing of such eruptions, not because the oils are especially irritating, but because of wide usage.

Among the compounds employed, lubricating oils, soluble oils, alkalies and insoluble oils were mentioned. Soluble oils

rarely cause dermatitis. The insoluble oils, which are of petroleum origin, cause dermatitis and it is important to understand that they may contain sulphur and chlorine, the latter of which especially has been found to be irritating. Such oils are practically sterile, and when containing bacteria, do not contain pathogenic types to any considerable degree.

Chloracne has become an important effect, especially in oils containing chlorine, and special studies have been made on this type of dermatitis.

Among the solvents which are important are the petroleum derivatives, the chlorinated hydrocarbons, varsol, and trichlorethylene.

In the control of dermatitis due to the various factors named, personal cleanliness stands out as the most important principle. Next in order comes protective clothing, including sleevelets and aprons of impervious material as well as gloves in some instances where they can be adapted. And lower down on the scale are protective ointments. This does not mean to say that ointments are of no value, for they are of value when properly applied and used.

In the treatment of such skin diseases, it is important that proper dermatological advice and methods be used; it will be found that some of the cases are somewhat obstinate to treatment of any kind and a great deal of patience must be exercised. In conclusion, it was stated that x-ray treatments is contra-indicated except in simple acne vulgaris; x-ray treatment does not apply to the chloracne of oil dermatitis.

DR. FRANK F. TALLMAN opened the "Symposium on the Employment of the Handicapped Worker," speaking on the subject "Mental and Psychological Problems Relative to Industrial Employment."

Only recently has mental hygiene been introduced into industrial medicine in any extensive way. It is now realized that the worker has a certain relationship to his human environment, and this conception is important—man has his effects upon men and is in turn affected by men.

One of the most vital concepts is that we must use the total man in our study of industrial employees.

Proper placement includes skill, personality, and reaction to the environment whether that be human or inanimate.

In the problem of absenteeism, sickness has been emphasized, but it must also be realized that the man may be sick of something else besides the ordinary type of human sickness—he may be sick of love, whiskey, taxes, housing, transportation, or any number of different factors which have been named as contributory to industrial absenteeism.

A recent book by Ralph Lee, called "Man to Man on the Job," expresses many of the ideas which are vital to industry these days in consideration of the mental hygiene aspects of industry.

The man with inadequate personality causes trouble, but may do better under war conditions.

The industrial physician has many things to think about and needs to team up with a good neuropsychiatrist. Included in this team should also be personnel consultants and teachers.

Among the types of persons needing attention may be the luetics, those with arteriosclerotic changes, the manic-depressives, the schizophrenics, the psychoneurotics, the involutional states, the reaction depressives, and the chronic alcoholics.

Accidents which result mainly from man-failure can be anticipated. They are due in many instances to (1) unwise selection and placement without due consideration to reaction time, dexterity, lack of training, and incoordination; (2) pre-occupation with family cares, causing crises —personality differences—compulsory punishment—these are the motivating causes of accidents. There are also those types of personalities who have a rather peculiar desire to punish others, and associated with this or without it, is the phenomenon of negativism.

In combating absenteeism, time must be taken to explain the problems of management to the workers. Large stores of finished products should not be lying around awaiting shipment, so that the workers can see that these are not

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on the move. Employees must be convinced of their indispensability. Throughout all of the experiences in industry, the type of executive supervision is reflected and the results are in accordance with the standards of supervision.

Fatigue is a common cause of accidents and also a common cause of maladjustment—it needs careful study. Monotony is also a factor. A combination of effort by the medical and personnel departments is needed to solve the problems brought about by these various elements.

It is granted that there are not a sufficient number of psychiatrists with the industrial point of view, but the problem will not wait. However, many industrial physicians and personnel workers can get the psychiatric point of view and use the methods that have been found successful. One must not overlook the fact that the employment of women on a large scale may cause executives to become psychiatric cases.

MR. E. P. CHESTER gave a short resume of the experience in the State of Connecticut (in the Bureau of Rehabilitation Service) on the subject "The Employment and Evaluation of the Handicapped Worker in Industry."

Connecticut's program was outlined—the representatives of labor, industry, the medical profession and psychologists held conferences and established a procedure by which the handicapped might be examined physically and psychologically and, with the cooperation of industrial executives, be properly placed at gainful employment.

The speaker agreed with Ford's statement on the usefulness of handicapped workers.

The need for the employment of handicapped workers and their proper placement and evaluation was recognized in Connecticut long before Pearl Harbor. It had been well established that men, like machines, are specific in their abilities and are restricted if handicapped—but need determines use.

In outlining the Connecticut plan, the first demonstration clinic of about a year ago was described; in this there were 20 people with various types of disability, including cardiacs, orthopedic disability, and tuberculosis, who were examined. Reports were obtained from physicians and psychologists and these persons were brought individually before the commission and asked about what they could do, other questions also being put in establishing the status of the individual and his possible relationship to future occupation. Various case histories were given as examples.

Other clinics were subsequently held and separate medical and psychological examinations were found to be expedient.

The end result was that about 70% of the persons have so far been placed, 20% have been put into training, 5% have been provided with orthopedic appliances, and 5% have been given a poor prognosis.

MR. L. J. CAREY, in opening the discussion of the Symposium on the Employment of the Handicapped Worker spoke on "Medicolegal Phases of Industrial Employment."

The principal legal impediment to the employing of the handicapped is the liability of the employer or perhaps more correctly stated, the fear of liability.

It is a general rule that the employer is responsible for the aggravation of any handicapped condition or defect—that he takes the worker as he finds him. When the injury is due solely to the handicapped condition, the employer is not liable—this principle has been the ruling in various supreme court cases. Be this as it may, however, the employer still has the fear of employing handicapped persons.

As opposed to this legal and psychological background, the Ford and Connecticut experiences are examples of what can be done to use handicapped workers.

It was the belief of the speaker that the answer to this problem is really a waiver, although labor objects, probably fearing abuse. Waivers have been used only in a few states thus far and there has not been much experience collected. Administrators are also somewhat against the use of the waiver, but it would seem logical to provide immunity against disability caused by previous disease or defects.

Connecticut has had the history of approving some 5000 waivers annually without any apparent difficulty; the law

also provides for a physical examination. The Connecticut statute was read and comment made upon it to the effect that it was a very carefully made statement. The recent Indiana statute was also read and discussed.

There is now in Michigan a proposed waiver pending on silicosis cases and also a provision for a second injury fund. It is believed that the latter will do a great deal toward stabilizing the present practices with reference to compensation for injury.

MR. JOHN W. GIBSON discussed the "Viewpoint of the Michigan Department of Labor and Industry."

It is believed that it is important to use workers even though they may be handicapped. In Wisconsin the basis for compensation is disability whereas here the basis for compensation is wage loss. Probably both principles have their good points.

It is believed that waivers are not practical because they are not equitable to all concerned. Also there may be political implications in determining ability for employment; moreover the waiver could be used to waive all rights to compensation payments.

Instances of refusal of employment were cited, and also of stopping of compensation where waivers have been in effect. All of this leads one to believe that a real survey is needed on the use of handicapped workers.

Compensation is a poor substitute for gainful employment. The second-injury fund provision is a step in the right direction and may help considerably in the employment of handicapped workers. Physicians certainly have an important place and responsibility in proper job placement of the handicapped.

MR. JOHN LOVETT discussed the "Viewpoint of the Employer." The problems confronting us have been variously classified as (1) injury in industrial employment in which industry owes the worker liability; (2) injury outside of industry; and (3) the morally handicapped.

A training program for handicapped workers has been recommended in the Department of Labor and Industry. Mental rehabilitation is decidedly important. Industry should do more along these lines. There should not be a politically controlled situation in these problems. The department should cooperate with industry, and surgeons should lay out the program with respect to medical rehabilitation. The employee cannot be utilized unless he has had the right training, and this applies particularly to persons who have sustained injury outside of industry.

There is considerable variation in the third category, but much can be done on the basis of ability.

DR. CARL M. PETERSON completed the afternoon program in discussing the "Viewpoint of the Medical Profession."

The industrial physician finds many problems in psychiatry which he can help considerably by using the "listening post" idea, but psychiatry can also bring a whole phase of human relations into play.

The medical profession generally agrees with the extension of the utility of the working force by such plans as the Connecticut Rehabilitation Bureau has sponsored and practiced.

A manual on the employment of women and the handicapped by the U. S. Civil Service is a real contribution expressed in terms of etiology, deformity, disability and correlation with job capacities.

Another important development has been the Prehabilitation Clinic at Rochester, N. Y.—this has been so successful that it highly recommends itself to others. In this work, the influence of DR. W. A. SAWYER has been outstanding.

The reconstruction era will bring accentuation of rehabilitation methods and reintegration of war casualties into industry. There will be a great demand for such methods. Medicine will continue to follow these developments with great interest.

Dinner Session

MR. CHARLES F. KETTERING, Vice-President in Charge of Research, General Motors Corporation, was the dinner speaker and closed the Post-graduate Industrial Medical and Surgical Conference.

The importance of postwar planning cannot be denied, but one always asks the question if it is a wish or a plan for postwar activities—are people going to be different after the war from what they were before?

There may be no difference between physicians and engineers, but it will probably be a hundred years before we have a real understanding of the chemistry of the human body.

For example, here is a problem: If you have a chunk off the sun, how would you organize the factors which made biology possible? This is purely a hydrogenation process. When you begin to separate biology from organic things, there isn't any separation—all animal life is oxygenation and plant life is hydrogenation.

The use of the term catalysis means we don't know what happens—just as the doctors have terms that are meaningless.

Buckwheat cakes are served only at a certain time of year—if you feed a guinea pig buckwheat and he goes into the sun, he will die because he is light sensitive, that is he will die if he is a light pig. A dark pig will survive, and this presents an interesting idea as to why people are dark in the tropics.

There are a great many interesting facts about chemical changes in the human body and the use of drugs. Chlorophyl, for example, becomes hematin in the blood by chemical changes involving magnesium and iron. It is furthermore an interesting fact that 80% of the herbs used by Aztec civilization are to be found in the U. S. Pharmacopeia. The Aztecs made observations for five periods of 400 years each, making changes in their methods at the end of each period. The Chinese used digitalis centuries ago and many other types of drugs—apparently they didn't lose any more patients than the modern medical man.

It should be emphasized, however, that a good patient has as much to do as the doctor.

Someday we will run automobiles by radiation; this is not far-fetched, because the origin of gasoline is petroleum.

A great many people are afraid of hospitals yet, because they think they are places to die. In one hospital, for instance, they changed nurses' uniforms from white to blue in order to promote a good psychological effect. Apparently what scares people is because the doctors won't take them into their confidence and sit down with them and talk things over. We must get rid of this cold unsociable atmosphere—for example, we hope to have a new hospital in Dayton after the war and maybe we shall have tea parties so people won't be afraid. We should make hospitals such places that when people have a little leisure time they will say "well, I have nothing to do, so I think I will go to the hospital for an hour." So general has the idea been that hospitals are bad places to go that a stranger in a strange town is in a hazardous position if he is ailing.

We should get people to the doctor before they get sick, and this should be routine.

Moreover, the doctors should tell people what they are going to do before they do it, so that the patient will know, and also tell them why they are going to do it. In other words, better human relations are needed.

Doctors should also learn to speak English, so that everybody can understand what they are saying.

The cooperation between industry and medicine ushers in a new era in which there will be constant improvements and which will provide for a service of inestimable value. There will be a great stepping-up of these combined services after the war. We must realize that we must get people to come before they are sick.

One of the greatest problems which we have is to keep up-to-date and still be able to make a living, but there is great value in talking things over at meetings such as this. However, the value of writing papers is somewhat doubtful at times. Papers are frequently written because somebody says something that gets people excited, then comes orientation and crystallization and a great deluge of papers on the subject.

In conclusion, we engineers have always considered it an honor and a privilege to help medicine in our way.

A Full Course in Industrial Health

Book Review by
WARREN A. COOK,
Director, Division of Industrial Hygiene and Engineering Research, Zurich Insurance Companies, Chicago

ESSENTIALS OF INDUSTRIAL HEALTH, by C. O. SAPPINGTON, M.D., DR. P.H. Published by J. B. Lippincott Company, Philadelphia; 626 pages, 63 illustrations. Pre-publication price, $6.50.

A COMPLETE, well-balanced industrial health meal, from soup to nuts, is offered in SAPPINGTON'S most recent and most ambitious book covering the field in which the author has long occupied an authoritative position. This comprehensive textbook presents a panorama of all phases of the subject of industrial health with which the industrial hygienist may come in contact. Whether or not he is directly concerned with such entities as industrial medical departments and the economic value of industrial health services, the broad picture of the entire scope of industrial health which is compactly presented in this practical treatise is bound to give him a better perspective from which to carry on his own phases of furthering industrial health. While covering the whole gamut of the subject, the author has succeeded in including detailed directions on important specific items, such as the plant survey, so that both neophyte industrial hygienists and the increasing number of experienced men engaged in this activity will find the volume useful in the conduct of their special approach to industrial hygiene problems.

While the first third of the book, covering industrial health administration, includes much material on the industrial medical department, the industrial hygienist will be interested in the readable historical development which constitutes the introduction. As part of the responsibility of the industrial hygienist is the presentation to management of the value of individual hygiene, the factual which will provide a more intelligent appreciation of them.

The second third of the book is written more directly for the industrial hygienist, covering as it does a classification of industrial health exposures, methods of conducting a plant survey with the utilization of scientific means for the evaluation and control of potential health hazards, and such factors of plant sanitation and personal hygiene as water supply, noise control, and health and safety codes. This second part also offers much to plant supervisors, engineers and safety men who are, or perhaps should be, concerned with these elements so vital to successful plant operation.

The final third carries the heading, "Industrial Medicine and Traumatic Surgery," but it also includes material on the personnel-relations aspect of industrial health—a phase of the subject that is deservedly gaining wider recognition. A discussion of industrial accidents and their prevention, is included, written less for the professional safety man than for the information of the plant physician or the industrial hygienist, to afford them an insight into the field and to stimulate their interest in its technique.

The occupational diseases are concisely discussed in this section, as are the non-occupational diseases and workmen's compensation.

Technical material of great value in the application of the principles outlined is included in an appendix. For the further pursuit of the subject a particularly well selected bibliography of 143 references is appended. The complete subject index, together with the index of proper names, will be exceedingly helpful in the utilization of this book for reference purposes.

Throughout the book are ample manifestations of the actual working knowledge of the author in the medical, toxicological, chemical engineering and medicolegal aspects of the subject. Many fundamental concepts are handled with a precise correctness that is encouraging in this day when so many things are being done in a great rush with consequent lack of nice distinctions. Such a concept as the distinction between a hazard and an exposure is a case in point. "Merely because there is an exposure to a substance which is capable of producing a toxic action or an injurious effect," SAPPINGTON states, "it is not to be surmised that a hazard exists." Although this statement may appear axiomatic, its observance would avoid many a misunderstanding.

The treatment of the material is strictly up-to-date, as is evidenced by SAPPINGTON'S reference to "aeroembolism" as related to the well-known "bends," and to aviation medicine which is assuming great importance with military flying and routine operation at high altitudes. We would have expected to find magnesium foundry workers listed under the occupations offering exposure to sulphur dioxide and to fluorides, as this occupation is causing much current interest in these exposures, but it is appreciated that there must be a limit to the detail in such a comprehensive book.

Criticism has been directed at maximum allowable limits for a number of reasons, and a principal defense has been that they should not be considered exact figures, but merely approximate values. It is unfortunate that in setting into type the list of maximum allowable limits, the publisher adventitiously added two zeros to the right of the decimal point which were not on the original manuscript and so indicated to the mathematically trained reader that these values are accurate to the hundredth of a part per million!

With few exceptions, however, SAPPINGTON has presented well accepted and accurate data on the many phases of the subject which he covers. It is to be wished that he might have expressed his own views on the disability evaluation of silicosis. Riddell is highly regarded, but the inclusion of the Canadian method of rating disability without discussion of practices in this country tends to give a misconception of present treatment of this situation in the states.

"Essentials of Industrial Health" deserves perusal by everyone who has contact with this subject. As is characteristic of SAPPINGTON'S writings, the book makes interesting reading. His treatment incorporates an enthusiasm for the subject which is infectious. The book should be part of the library of all industrial hygienists, who will have constant reference to its pages for guidance of their work.

Gases and Vapors

Book Review by
C. O. SAPPINGTON, M.D., Dr. P.H.

NOXIOUS GASES and the Principles of Respiration Influencing Their Action, by YANDELL HENDERSON and HOWARD W. HAGGARD. Monograph Series, American Chemical Society. Second and revised edition; 294 pages. Published, 1943, by Reinhold Publishing Corporation, New York; price $3.50.

PUBLISHED originally in 1927, "Noxious Gases" was always a necessary part of the reference library of all persons interested in the technology of gases and vapors. The revised edition contains a great deal of the elemental information originally published, supplemented by certain changes which have become necessary during the past 15 years.

The reviewer does not entirely agree with one of the statements made in the foreword, although there is much to commend it: "It is the function of the physician to recognize disease and to apply such treatment as may be known. Unfortunately, in respect to many of the industrial diseases, his best efforts can do little to repair damaged bodies. It is the function of the lawyer, when the health or life of the individual worker has been impaired or destroyed, to win for him or his family a money compensation. At best the functions of both the physician and the lawyer are exercised only after the harm has been done and the suffering inflicted. The aim of this book is not so much to contribute to treatment or to aid in the winning of compensation as to make available the knowledge, the principles and the techniques upon which measures of prevention and of safety in industry must be based." Nowadays there is an increasing demand on the part of physicians, hygienists, safety personnel, and executives to obtain the type of information which Henderson and Haggard include in this book relative to measures of prevention and

safety in industry. Although the majority of physicians in industry still do curative medicine and surgery, definite appeal should be made to such members of the profession to increase their knowledge with respect to preventive medicine and safety methods. It is only in so far as the principles of preventive medicine and public health in industry can be utilized successfully that real advance can be made in industrial medicine, industrial hygiene and industrial health.

There are two features of the book which are of immense importance to those interested in the prevention of trouble. One is the tabulation in Chapter 7 of the Classifications of Noxious Gases and Vapors, which gives the name, formula, molecular weight, boiling point, ordinary condition, and the nature of the physiological action; and the other is the conversion table for gases on pages 54-55, where various conversion factors are also given as a footnote and where, by use of this table, it is possible to convert from milligrams per liter to parts per million, or contrariwise. The reviewer has often used these tables and still continues to use them.

Two other important parts of the book are the chapters on the elements of respiration, the respiratory functions of the blood and their laws, and the principles determining absorption, distribution, and elimination of volatile substances, which seem so much neglected and little understood by physicians in general; another is the supplementary statement on breathing machines by YANDELL HENDERSON which closes the book. This is also of great importance to physicians who as a group are prone to believe that some sort of machine or device is necessary to assist respiration in cases of suspended breathing or to give some kind of drug, rather than to rely on the universally accepted method of manual artificial respiration, which can be immediately applied and which has proved to be efficient in many instances.

This book is heartily recommended for all types of industrial personnel, with the emphasis particularly on physicians and surgeons, because a great many of the non-medical person have already been using this book for many years. The material in the volume should lead to a better understanding between the medical and the non-medical individuals whose industrial interest is primarily one of the prevention of accidents and illness in industry.

NEWS, COMMENT and OPINION

—*Continued from page 54.*

of 12 to 20 minutes. Marches are used frequently for openings, and marches or fox-trots for shifts or changes. Music is not often played during the last 20 minutes of work. Vocal numbers are considered distracting, although some factories encourage group-singing, both during work and relaxation periods. Music is usually used with a paging or announcement system, compulsory in England and increasingly popular here.

—From "Music in Industry," in "What's New in Industrial Hygiene," March.

DR. ALLEN O. GRUEBBEL has been put in charge of a program sponsored by the Missouri State Health Department to stimulate industrial dentistry.

DR. GLENN GARDINER'S medical department, at Foote Bros. Gear & Machine Corporation, Chicago, is described by LOIS THRASHER, in her employee-relations series in *Chicago Daily News*, April 28, as "the latest word in industrial medicine equipment and facilities. It has, for instance, the only orthorater (hand-made eye machine) in use in industry, because their manufacture is recent and the armed services took all the others."

IN PHILADELPHIA, a plan is reported in operation where one physician served five small factories varying in size from 100-550 men. In each of these factories there was an examining room and a treatment room. The doctor was in attendance one hour per week per hundred employees. A nurse also participated in this plan. The physician conducted pre-employment and periodic check-up examinations. He was acquainted with the industrial processes and hazards of each plant, and advised management and the plant engineers in the control of these hazards. He gave health lectures, first-aid instruction and supervised plant sanitation. In addition, of course, he took care of industrial injuries and emergency non-industrial illness and injury. It was interesting to note that all but one of the participating manufacturers felt that the plan was so worthwhile that they increased the hours of attendance of both the doctor and the nurse above the original minimum.

—From "How The Small Plant Can Conduct a Health Program," by MILTON H. KRONENBERG, M.D., Fifth Annual Congress on Industrial Health.

MANY physicians, both in the service and in civilian practice, fear that following the war, sweeping attempts will be made to Federalize, socialize or collectivize medical practice. While some of us do not share these fears, one need not look further than the ever-broadening scope of Indiana Industrial Disease Laws to provide a full-fledged pattern and a valid precedent for private insurance, Federal, state or other forms of group practice, the activities of which could gradually eliminate all rights of the individual in his personal choice of physician.

—From "The Rights of the Industrial Practitioner in the Industrial Medical Program," by KARL R. RUDDELL, M.D., in *J. Indiana State M.A.*, April.

THE great majority of beginning cases of tuberculosis present no symptoms. These cases are difficult to detect by the old means of diagnosis. It is now generally recognized that the chest x-ray film is indispensable in discovering early cases. Greater progress in the prevention of tuberculosis depends to a considerable extent on the increasing use of the x-ray of the chest.

—DR. ROBERT B. KERR, Executive Secretary, New Hampshire Tuberculosis Association, quoted in *Manchester, N. Y., Union.*

THE Twenty-first Midwest Safety Conference at Chicago, May 4-6, had an afternoon session May 6 (at which DR. JOSEPH H. CHIVERS, Medical Director, Crane Co., presided) on Wartime Personnel Problems Affecting Health and Safety. The following were the speakers and subjects: C. O. SAPPINGTON, M.D.: "Industrial Health During and After the War"; MISS VICTORIA C. STRALKO, R.N.: "Utilization of Industrial Nursing"; JOHN NAGEL, JR., "Safety Zone Material and Methods"; and GEORGE P. WARDLEY: "Problems Pertinent to Employment of Physically Handicapped."

THE two-day conference in Indianapolis (February 25-26) was designed to be a refresher course for all interested in industrial medicine. The Committee on Industrial Health arranged for nationally-known speakers and the program read like a "Who's Who" in industrial medicine. Emphasis was placed on subjects that required immediate solution and attention of industrial physicians. The leading occupational diseases in Indiana are dermatitis, lead poisoning and silicosis. These were authoritatively covered by

—*Continued on page 346.*

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INDUSTRIAL HEALTH and DISEASE

Food in the Factory

THE general recommendations of the Nutrition in Industry Section are:

1. Wherever it is impossible for employees to secure adequate food in the vicinity of the plant, some type of plant feeding should be provided. The type of plant feeding should depend upon the size, location and layout of the plant. It may include cafeterias, canteens, lunch counters, mobile units or packed lunches. It may be a plant-managed or a concessionaire managed food service. It should be under the direction of a trained nutritionist, whenever possible.

2. Food services in plants on three shifts should be on a 24-hour basis. As some of the problems which lead to fatigue, illness and accidents are the lack of adequate breakfasts, nutritious packed lunches and sufficient food service for swing shift workers, the 24-hour basis food service is important for production as well as for health protection.

3. Too frequent changes from one shift to another should be avoided. It is desirable that a worker stay on one shift at least two or three months so that he can make the necessary adjustments to provide for normal food, rest, recreation and sleeping habits.

4. The length of the lunch period should be long enough to allow at least 15 minutes for actual consumption of food. In the majority of cases this would permit lunch periods not less than 30 minutes.

5. Staggered lunch periods are recommended in order to provide for full utilization of labor and equipment and to provide for service to the greatest number of employees.

6. Plant lunches including simple nutritious food at moderate prices are recommended as a means of encouraging better food selection and preparation, economy in time and service, and conservation of food. Plant lunches might include citrus fruit or tomato juice, meat or some alternates, raw vegetable salad, green or yellow vegetable, potato, milk in some form. Choice of beverage should be included.

7. Cold lunches may be as nutritious as hot lunches if the right foods are selected. Suggestions for both cold and hot lunch menus will be provided by the Nutrition and Food Conservation Branch, Nutrition in Industry Division, Food Distribution Administration upon request. Lunches should provide 1/3 the daily food requirements as recommended by the National Research Council.

8. Between-meal feeding is recommended where plants can allow eating near assembly lines or in proximity of machines. It has been proved that between-meal feeding reduces fatigue and accidents. In every instance where between-meal feeding has been tried production has increased. Between-meal refreshments should consist of foods that may be served quickly and eaten without too much preliminary preparation on the part of the worker. They should consist of something more than candy or soft drinks. Bread is just as good a source of ready energy as any candy bar or soft drink. Some suitable foods for between-meal feedings are tomato juice, fruit juice, milk or sandwiches or enriched or whole-grain bread with nutritious fillings.

9. Consumption of milk is to be encouraged. Wherever possible, each worker should consume at least one pint of milk daily. There is no evidence that milk is of any value in preventing toxic reactions in munition industries. However, the inclusion of a pint of milk a day in the average American diet is essential for an adequate supply of calcium and vitamin B_2. Milk also contributes important proteins.

10. The selection of the right food at the right time should be encouraged through the use of posters, articles in plant magazines and leaflets distributed to workers. The Nutrition and Food Conservation Branch of the Food Distribution Administration and several commercial sources have materials for distribution. The Nutrition and Food Conservation Branch maintains a National Nutrition News Service which will provide articles for plant publications upon request.

11. Nutrition education for women in the families of employees is recommended. This may be offered through leaflets distributed to workers, through lectures, motion pictures, and through clubs and classes which may be arranged through the cooperation of nutrition committees and labor management committees.

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NOSE
THROAT
WET DRESSING
for wounds
or minor
burns.

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"Shipyard Eye"

SHIPYARD EYE, an old affliction with a new name, seems to be waning in Pacific Coast shipyards, which is welcome news. The infection has been a major contribution to absenteeism and inefficiency. There is some evidence that it is increasing elsewhere, but not necessarily among industrial workers.

Dr. Forrest E. Rieke, of Portland, medical chief for Henry Kaiser's three shipyards here, says the disease hasn't been licked by a long shot. But for the time being, at least, it has been reduced in these parts to a minor obstacle to the war effort.

There was a time when shipyard eye had the Kaiser medicos frantic.

One November day in 1941, Tin Hat Tommy, working in the Oregon Shipbuilding Corp., which builds Liberty ships, suddenly felt as though he had a couple of deck plates in one eye. The lid swelled, the eye got red and began to exude brownish tears endlessly.

By December 1 about 600 out of 11,000 workers had shipyard eye.

"We were swamped and baffled," said Dr. Rieke. "Every therapeutic agent for the treatment of ocular infection was used. None did any good."

Then, in mid-December, shipyard eye disappeared as abruptly as it came. By Christmas there was hardly a case in the yard. The medicos admitted they didn't know why. "We still don't," said Dr. Rieke.

Some men went home and submitted to constant treatment. Others refused to leave the job. Some worked hard and rubbed the brown tears out of their eyes with anything from a clean cloth to a dirty glove. Yet they all got well about the same time.

Epidemics come in waves. The second broke out at Oregon shipyards in January of 1942—50 cases. Forty more in May. One in August. They kept a case history on the August victim with clinical precision, and learned practically nothing. January, 1943, spawned a dozen new cases.

"We know it's highly infectious," Dr. Rieke continued, "yet there were

AP dispatch from Portland, Oregon, in *Chicago Daily News*.

Are your workers getting all the VITAMINS *they need?*

VITAMINS are not a substitute for food—proper nutrition can be maintained only by consuming natural foods containing the needed kinds and amounts of nutrients. When adequate vitamin intake is assured by supplementary vitamin feeding, workers will derive the maximum amount of benefit from their daily diets.

More and more large industrial organizations have become convinced that supplying vitamins to employees adds substantially to personnel efficiency.

Lederle specialists are available to study your particular vitamin problem; and to collaborate with your own staff in working out an appropriate and economical vitamin program.

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The External Cod-Liver Oil Therapy

USED EFFECTIVELY IN THE TREATMENT OF

Wounds, Burns, Ulcers, especially of the Leg, Intertrigo, Eczema, Tropical Ulcer, also in the Care of Infants

Desitin Ointment contains Cod-Liver Oil, Zinc Oxide, Petrolatum, Lanum and Talcum. The Cod-Liver Oil, subjected to a special treatment which produces *stabilization* of the Vitamins A and D and of the unsaturated fatty acids, forms the active constituent of the Desitin Preparations. The first among cod-liver oil products to possess unlimited keeping qualities, Desitin, in its various combinations, has rapidly gained prominence in all parts of the globe.

Desitin Ointment is absolutely non-irritant; it acts as an antiphlogistic, allays pain and itching; it stimulates granulation, favors epithelialisation and smooth cicatrisation. Under a Desitin dressing, necrotic tissue is quickly cast off; the dressing does not adhere to the wound and may therefore be changed without causing pain and without interfering with granulations already formed; it is not liquefied by the heat of the body nor in any way decomposed by wound secretions, urine, exudation or excrements.

DESITIN POWDER

Indications: Minor Burns, Exanthema, Dermatitis, Care of Infants, Care of the Feet, Massage and Sport purposes.

Desitin Powder is saturated with cod-liver oil and does not therefore deprive the skin of its natural fat as dusting powders commonly do. Desitin Powder contains Cod-Liver Oil, (with the maximum amounts of Vitamins and unsaturated fatty acids) Zinc Oxide and Talcum.

Professional literature and samples for Physicians' trial will be gladly sent upon request.

Sole Manufacturer and Distributor in U. S. A.

DESITIN CHEMICAL COMPANY

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men who actually used a victim's towel and didn't get it. Those without immunity seemed to get it out of thin air. It didn't seem to make any difference what their physical characteristics were or what kind of jobs they were working at."

There's a theory that some very common disease, possibly some child's ailment that nearly everyone has had, sets up an immunity against shipyard eye. That's pure speculation, but when the infection spread into cities and towns it did not bother the schools.

Ninety per cent of the Portland victims suffered no permanent damage. The other 10 came out of it with slight specks on the cornea of the eye. These caused slight impairment of vision.

In the last two years shipyard eye has turned up thousands of miles from shipyards. There have been localized midwest epidemics of severity. Dr. Rieke has received requests for research information from most parts of the United States, parts of Canada, England and Australia.

The virus is elusive but the medical profession is slowly assembling a dossier. For one thing the medicos know that Europe had epidemics in the 1890's. It has been common in the Malay Peninsula. Apparently it reached the U.S. on this trip from Hawaii, where cannery workers blamed it on pineapple juice that got in their eyes. It seems to be a tropical bug with a noteworthy ability to acclimate.

Nobody knows why it happened to hit the shipyards first. The doctors do know that in spreading it did not confine itself to industrial workers. Spokane, for example, had 50 cases and only one of them was a war worker.

The doctors also know that it follows no exact pattern. Earlier sufferers here endured no pain—only discomfort. Most recent victims suffered considerable pain and headaches. So far most victims have recovered, with or without treatment, in from 12 days to three weeks.

The doctors are pretty sure the current shipyard eye is a war concomitant. They also say that if we don't get anything worse we'll be lucky.

Absenteeism

—Unauthorized Time Away from the Job—

FEW statistical data are available to indicate the general extent of absenteeism in war industries. Scattered surveys have been made, but many of these are of limited value because they cover too few workers and plants:

(a) Bureau of Labor Statistics reports from commercial shipyards show an absenteeism rate of 7.8% in October, 1942. Women were then 2% of the workers. In the airframe and propeller industry, B. L. S. reports absenteeism at 6.4%.

(b) A War Manpower Commission survey of 45 plants employing 210,000 workers in Michigan, Ohio, Kentucky, released in February, 1943, shows absenteeism rates varying from 3% to 6%.

(c) The New York Regional W. M. C. study in January, 1943, covered only eight plants employing 40,000 workers; showed average a daily absenteeism rate of 6% for all workers; greater for women than for men; highest rate the day after payday.

(d) A National Industrial Conference Board study, November, 1942, covered 22 companies employing 80,000 workers; showed that illnesses accounted for 47.5% of absenteeism; personal reasons for 51.9%, greater for women than for men.

(e) CIO President Murray estimates that normal absenteeism of workers in American industry is 2.2%. Since the war it has increased to 4.5%, and among women it is 6.5%.

(f) British experience: In the fall of 1942 it was estimated, unofficially, that 10% daily of the 6,000,000 British war workers were absent from work. Though legal proceedings may be instituted against those who are absent without reasonable excuse, the British government has made little use of its legal authority. Instead it has adopted a remedial program by trying to find the cause and correct it.

Causes of Absenteeism

ABSENTEEISM can be dealt with effectively only if the causes are known. Statistical data do not differentiate between voluntary and involuntary absenteeism, i.e., between casual and deliberate absence from work, and absence due to causes beyond the worker's control. The distinction is especially important in the case of women workers. Women are more subject to illness than men. Many women carry on two full-time jobs—home and factory. Absenteeism can be reduced only if industry

U. S. Department of Labor, Women's Bureau, Washington.

HOW SAL HEPATICA INCREASES LIQUID BULK

THE REPUTATION of Sal Hepatica as a mild yet thoroughly effective intestinal cleanser seems to grow brighter with passing time. It has long been known that Sal Hepatica flushes the intestines and initiates peristalsis through creation of temporarily unabsorbable *liquid bulk* in the bowel. New laboratory studies simply corroborate the literature on the "mechanism" of the action of Sal Hepatica salines. For example:

Sal Hepatica in laxative dilution was placed in one isolated canine ileal loop, a cathartic solution in another loop. After one hour in the peritoneal cavity, examination revealed that the laxative dilution of Sal Hepatica had gained 34% in volume, the cathartic dilution 204%.

Sal Hepatica aids in relief of certain types of gastric distress; it exerts helpful choleretic properties to promote the flow of bile. Sal Hepatica makes a bubbling, pleasant drink. Literature on request.

◀ Graduate on left contains 5 cc. of Sal Hepatica solution as placed in ileal loop of dog. Graduate on right shows 6.7 cc. obtained after loop remained in peritoneal cavity for one hour. Inset depicts distended loops of dog's intestine filled with liquid bulk.

SAL HEPATICA

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Ethical for seventy-five years. *Descriptive literature and sample on request.*

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and the community will cooperate to remove the causes of absence.

ILLNESS AND ACCIDENTS:

It is generally agreed that the major cause of involuntary absence is sickness. The U. S. Public Health Service reports show that in 1940 the frequency of sickness and non-industrial injuries lasting more than eight days was 153 per thousand for women as compared with 96 per thousand for men. For 1941 the number of cases per thousand women was 163 as compared with 101 cases per thousand men.

For illnesses of short duration the excessive sickness rate for women is even more marked. One company reporting to the Public Health Service for example, found that the annual rate of sickness of one day or longer was 1,561 per thousand women, and 894 per thousand men.

In addition, where both husband and wife are working, sickness among family members of children usually means that the wife rather than the husband remains at home to provide care.

FATIGUE:

Fatigue due to continuous work with too little time for rest and relaxation is a direct cause of absenteeism. The worker takes time off to rest up, sometimes preventing serious sickness or nervous exhaustion later.

Long working hours inevitably cause fatigue. Night work makes it difficult for the worker to get sufficient rest. The seven-day week is particularly harmful. A General Motors study showed that absenteeism was greater where the work week was changed to seven days of seven hours each than it had been when the work week was five days of 10 hours each. One day off per week is essential to keeping down fatigue.

Working conditions in some plants, poor eating facilities, inadequate lighting and ventilation, increase fatigue. In some plants unsanitary, crowded, and poorly kept rest-rooms contribute to dissatisfaction and uneasiness of women workers.

Transportation difficulties, long hours spent in travel at the beginning and end of the working day, crowded buses and streetcars, and the necessity of standing for journeys of 30 minutes or more, all have been found to add to the worker's fatigue.

When the worker is a woman with home responsibilities so that her workday does not end at the factory, fatigue is immeasurably increased.

HOME RESPONSIBILITIES:

Many women employed in industry also carry the major burden of running the home. This is even more true of married women who are entering industry for the first time under pressure of the war emergency.

Home responsibilities, which many such women must undertake, include marketing, cooking, care of children, house cleaning, laundry, shopping, and numerous miscellaneous chores. All these must be done in the worker's time away from the job, and contribute to absenteeism.

HOUSING SHORTAGES AND TRANSPORTATION DIFFICULTIES:

Makeshift housing such as trailers, tents and frame shacks cause inconvenience and unrest among workers, so that they spend time looking for new quarters. Unsanitary conditions also lead to sickness.

Crowded housing facilities around many war plants often make it necessary for the worker to live an unreasonably long distance from the plant, and indirectly result in absenteeism.

OTHER CAUSES—VOLUNTARY ABSENTEEISM:

Some causes given by employers and others who regard most absenteeism as deliberate and intentional are high wages, making full-time work unnecessary; drunkenness; fishing; movies, and other diversions.

Some causes of absenteeism advanced by labor unions are inefficient management; lack of planned production; lack of good supervision; poor factory morale.

Methods of Reducing Absenteeism

IN GENERAL, methods for reducing absenteeism may be classified in two main groups: (a) Direct appeal to the worker, through disciplinary action or otherwise. (b) Indirect cooperation with the worker by furnishing increased facilities and otherwise helping him carry his responsibilities To date, discipline has been the most usual method in this country. Cooperation of the employer and community in solving the worker's problems has proved to be a successful method in Great Britain and is receiving increased attention here.

DIRECT APPEAL TO THE WORKER:

1. By the employer:

Discipline: Nearly all employers interviewed by Women's Bureau field agents used disciplinary methods to reduce absenteeism. Some methods tried are penalty layoffs; probation; low-pressure follow-ups, such as home visits by personnel workers; telegrams and telephone calls to absent workers; removing the time card from the clock and substituting a warning card instead; requiring the worker to fill out a questionnaire; posting public record of absences; loss of annual vacation.

Reward: Departmental contests for the best attendance; award pins and certificates; use of attendance records as basis for promotion and transfer; naming manufactured products for the worker with the best attendance record; attendance bonus.

Personnel policies: Many companies are adapting their personnel policies to meet the growing problem of absenteeism. One method is to have someone who is capable of an understanding and sympathetic approach to the workers' problems interview workers who return to the job after an unauthorized absence.

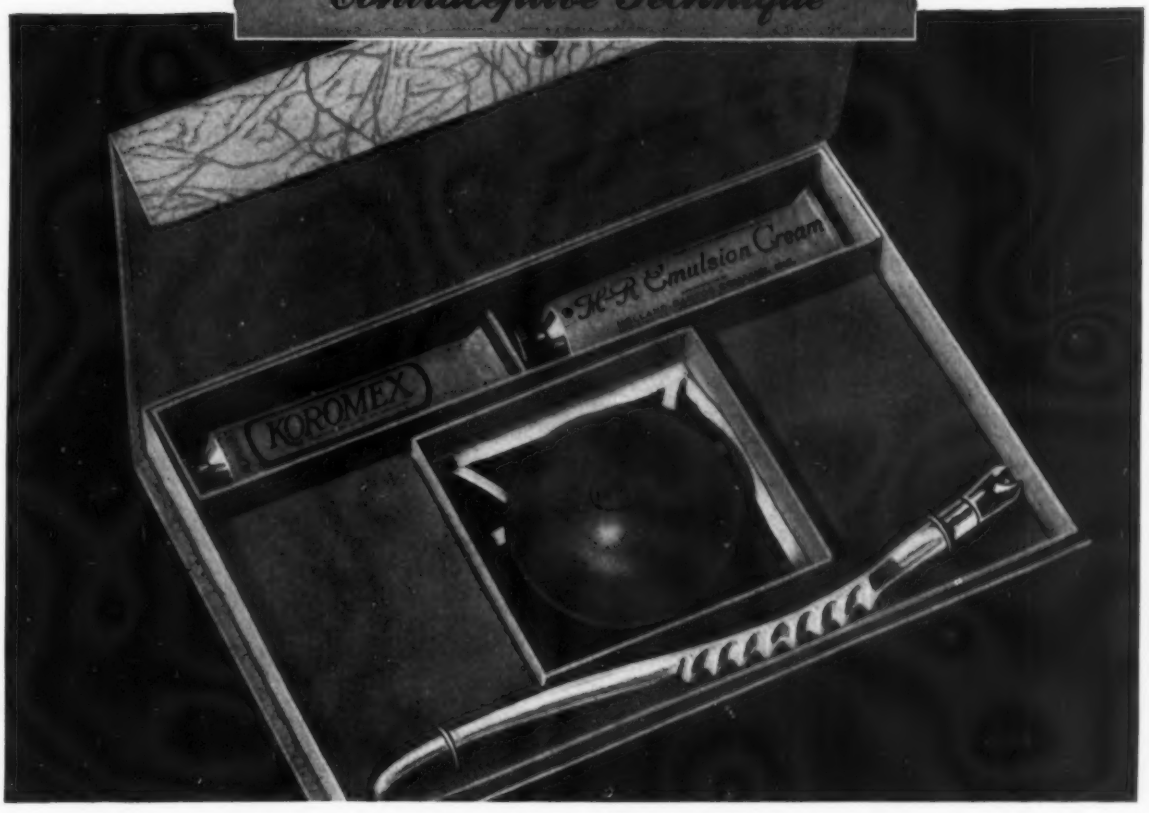
The Secretary of Labor has recently suggested to employers that centralization of authority and adoption of a definite system of handling absences would help solve the problem in each plant. The Secretary's recommendations are: (1) Place one person in charge of absences. (2) Have untoward absences reported to him. (3) Analyze the causes of absences. (4) Discover which management, or labor, or both, can remove. (5) Keep absenteeism records which are standard with those kept by others.

2. By the unions:

Methods reported include use of pledge cards for members; investigation of absences; personal interviews of chronic absentees; withholding of Sunday double time; work through labor management committees.

COOPERATION IN MEETING THE WORKER'S PROBLEMS:

A complete unit for Approved Contraceptive Technique



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KOROMEX JELLY and H-R EMULSION CREAM—Both preparations have equally high spermicidal value, but differ in degree of lubrication. Both are included so the patient may determine which preparation better meets her requirements and personal preferences.

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Exhortation and other direct appeals to the worker are inadequate remedies for the problem of absenteeism because they do not correct the cause of the trouble. Problems facing women workers must be met by cooperation of employers and the community.

1. What the Employer Can Do:

Working hours: (1) Moderate working hours for all workers: The eight-hour day and one day off in seven should be the standard for all workers to prevent fatigue. Women's Bureau agents reported that one company had almost no absenteeism after they went on a five-day week. (2) Planned hours of work: Where women have many outside responsibilities, the employer should arrange working hours to fit the worker. Not all women can observe usual factory hours and rigid shifts. (3) Part-time work: In England, part-time work has proved successful for women with home responsibilities. In December, 1942, part-time workers in Great Britain numbered 500,000.

Shift schedules: Hours of shifts are adjusted as far as possible to suit the individual having the care of a home and children. Schedules for part-time work which have proved to be satisfactory are:

Two part-day shifts: 7:30, 8:00, or 8:30 A.M. to 12:00, 12:30, 1:00, or 1:30 P.M.

1:00, 1:30, or 2:00 P.M. to 5:00, 5:30, 6:00, 6:30, or 7:00 P.M.

Reduced day: 9:00 or 10:00 A.M. to 3:00, 4:00, 4:30, or 5:00 P.M.

Part-of-week working: two, three, or four days a week, sometimes on alternate days.

Evening shifts: 3:00, 4:00, 5:00, 5:30, 6:00 P.M. to 8:00, 9:00, 9:30, 10:00 P.M., or midnight.

Week-end shifts. Relief shifts. Rush-hour shifts.

Suggestions for using part-time workers:

(1) Keep the part-time section separate.

(2) Select work that can be finished in a single work period, or jobs of a repetitive nature that can be put aside until the next work period without interfering with production. (Containers should then be provided for storing the work.)

(4) Night work: Family responsibilities and care of children should be taken into account in assigning night work. Shifts should not be rotated too frequently, as the worker must have an opportunity to adjust to the change in sleeping and eating habits.

(5) Holidays and vacations: An annual vacation of at least one week is a physiological necessity. Though American industry has discontinued the practice of granting public holidays in the war period, it is notable that Great Britain has recently restored this practice and will give all workers a three-day holiday four times a year.

Plant facilities: The employer has a direct responsibility to safeguard the worker's health through: adequate safety devices; first aid and medical treatment; change houses for workers who handle toxic substances or work in hot and humid atmospheres; annual physical examinations; hot meals in the plant; lunch facilities; time for lunch.

The employer should provide well-kept and adequate restrooms, and should give employees at least two 10-minute rest periods each day in addition to the lunch period, during which the worker can leave the workroom.

Transportation: Many employers have organized "car pools" so that workers will have better transportation. Some war plants operate their own buses where other transportation is inadequate. Staggering of working hours for each shift also eases the transportation burden.

Morale: The employer has a major responsibility to maintain workers' morale. This can be done in many ways. Each worker must know the importance of his own particular job and its relation to the whole enterprise. Organized recreation, even by private facilities, has proved successful, such as bowling teams, etc. In England, an effective method of maintaining morale is to grant time off to women whose husbands are home on furlough.

2. What the Community Can Do:

Any steps taken to lighten the woman worker's double load of factory work and housekeeping, or to improve her living conditions, will indirectly reduce absenteeism. Some of the methods found satisfactory in Great Britain which might be useful here are the following:

Time off for shopping: One afternoon a week is allowed in many British plants, or in some cases one or two hours a week. Some firms have a relief worker who takes over as the regular workers take their turn at shopping.

The Women's Bureau has reports of some war plants in this country that now maintain a mobile utility working force used as fill-ins for absent workers. However, no such plan appears to be in use for absences excused in advance.

Shopping certificates: The British have worked out a system by which the worker can leave a "priority certificate" or a written order on the way to work, to be picked up at the end of the day or later in the week, so that the worker gets her share of rationed and unrationed goods. "Buyer certificates" are also used so that friends of workers can do their shopping for them.

Change in business hours: In some areas both here and in Britain, stores are kept open later than normal to allow workers to shop in the evening. There is need for access to professional services at other than the established hours.

Workers who must visit dentists, doctors, and lawyers usually must take time off from work.

Communal food services: The British government has recognized the importance of factory food service and may require any manufacturers employing more than 250 workers on war production to provide canteens. Many plants in this country lack satisfactory food facilities where hot meals may be purchased at reasonable cost.

British restaurants, which is the term used for emergency eating centers, furnish food at nominal cost to the general public. Many families make use of these restaurants for meals outside the home.

Day care of children: Adequate provision to meet this need is an immediate requirement if absenteeism among married women homemakers is to be reduced.

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The specialized Resinol medication combines ingredients well known and widely used by the profession because of their antipruritic and healing action. It avoids resort to dangerous scratching and may be applied freely on mucous or denuded surfaces. Resinol does not interfere where other forms of therapy are also indicated. *Try it.*

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Improved housing facilities: In some areas workers are living in trailers, tents, and hastily constructed wooden shacks. In rooming houses, beds are occupied by workers in rotation, and highly unsanitary conditions are reported. Communities can do much to relieve unsatisfactory housing conditions.

Industrial Medical Service

BEFORE recommendations as to emergency medical service for industrial plants are considered, the existing industrial medical services should be appraised. Industrial medical department personnel and facilities should be studied to determine whether they will be adequate to care for large numbers of seriously injured persons. Plant medical departments may be adequate to cope with ordinary industrial accidents, but are not ordinarily staffed or equipped to provide medical service in catastrophes.

Functions

THE essential functions of an industrial medical service are: (1) To study hazards in the plant and to make recommendations for their elimination; (2) to provide emergency care of those who become ill or are injured while at work; (3) to conduct pre-placement examinations to insure proper assignment of the worker and to make periodic re-examinations of employees, especially of those exposed to toxic substances. The modern industrial physician, in his capacity as the plant's health officer, has, of course, other important duties.

The per capita requirement for physicians for those who become ill or are injured in the plant, is much less than the per capita requirement for physicians in the community as a whole for non-industrial illness and accidents. Few plant medical departments furnish complete medical care for employees and their dependents. Non-industrial injuries and diseases cause a loss of man-days 15 times that resulting from industrial injuries and occupational diseases.

Personnel

IN A STUDY of industrial health services, reported by the U. S. Public Health Service in 1940, it was found that only 20.3% of workers in plants of more than 100 employees had full-time plant physicians, 27.6% had part-time physicians, and 52.1% had none. In plants of less than 100 employees, 94% of the workers had no plant physician service.

A study conducted in 1942 reveals that even in plants with 1,000 or more employees only 39% of workers have access to full-time plant physician service, while in plants of less than 1,000 the figure is 5.4%.

The 1940 study reveals other data of interest. In plants with more than 100 employees full-time nursing service was provided for 43.7% of workers, part-time service for 1.9%, and no nursing service for 54.7%. In plants of less than 100 employees 98.9% of the workers had no nursing service. In general, the number of physicians and nurses in industry is inadequate to provide satisfactory industrial medical service. This deficiency in medical personnel would be greatly magnified in a major catastrophe.

Facilities

WITH regard to hospital or clinic facilities the situation is little better. In plants employing more than 100 workers, no provision for hospitalization, even for the care of industrial accidents, is made for 80.7% of the workers, and no first aid room was provided for 35%. In plants of less than 100, there was no hospitalization provision for 96.7%, and no first aid room for 93.1%.

The plant first aid room or dispensary is usually unsuitable for the care of large numbers of persons at one time. It is generally small and often divided into cubicles to provide privacy for the physician and patient. Equipment is usually meager and often consists of little more than an eye chart, treatment chair, gooseneck lamp, an examining table and a handful of instruments. Two or three beds are sometimes provided in a room to one side, where the seriously injured person is placed until transportation to a hospital can be arranged.

Occasionaly one encounters a plant first aid department with excellent diagnostic and treatment facilities, but even such units are so arranged as to be unsuitable for the care of a large number of casualties at one time.

Most plants without first aid rooms have purchased first aid kits for the care of the injured. Such kits are

From OCD Medical Division Bulletin No. 7, entitled "Emergency Medical Service in Industrial Plants."

FOLLOWING is the form used by the Bureau of Industrial Hygiene, Pennsylvania Department of Health, in making surveys of industrial medical facilities. DR. JOSEPH SHILEN, Director of the Bureau, is reporting on the results of a county-by-county survey in his state at Rochester, New York, on May 24 (Program on page 312).

Survey of Medical Facilities in Industry

_____County _____1943

1. Name and address of plant.....
2. Person interviewed.....Title.....
3. Type of industry.....
4. Number of employees: Total.....Male.....Female.....
5. Personnel of your medical department during year 1942.
   a. Full-time physician: Yes ( ) No ( )
   b. Part-time physician: Yes ( ) No ( )
      (1) If part time, how many hours?.....
   c. Physician on call: Yes ( ) No ( )
   d. Full-time nurse: Yes ( ) No ( )
   e. Part-time nurse: Yes ( ) No ( )
      (1) If part time, how many hours?.....
6. What type of medical service do you render?
   a. Pre-employment examination: Yes ( ) No ( )
   b. Periodic medical examination: Yes ( ) No ( )
      (1) How often?.....
   c. Only accident cases which would be compensable: Yes ( ) No ( )
   d. Compensable accident cases and emergency illness: Yes ( ) No ( )
   e. Plant inspection for hazards by company physician: Yes ( ) No ( )
7. What was the approximate cost of maintaining your medical department for the year 1942, exclusive of compensable cases?.....
8. Number of employees referred to your medical department during year 1942.
   Actual ..... Estimated .....
9. Does your company have a sick benefit association? Yes ( ) No ( )
   a. If yes, how is it supported? (1) Company alone ( ) (2) Employees and company ( ) (3) Employees alone ( )
   b. What percentage of employees belong?.....
   c. What benefits are paid?.....
10. Do you have a hospital insurance plan? Yes ( ) No ( )
    a. Approximately how many employees belong?.....
    b. Detailed description of benefits paid.....
    c. Approximate cost to employee per month.....
11. Do you use educational posters, placards, etc., distributed by the National Safety Council, U. S. Public Health Service, Pennsylvania Department of Health, and others? Yes ( ) No ( )
12. Would you use such placards? Yes ( ) No ( )
13. Would you be interested in having a physician make health talks in your plants? Yes ( ) No ( )
14. Would you be interested in the presentation of educational health movies in your plant? Yes ( ) No ( )
15. Has your plant had an industrial hygiene survey in the past two years? Yes ( ) No ( )
16. Would you be interested in such a survey, at no cost to you? Yes ( ) No ( )
17. Have you a system for the recording of industrial absenteeism? Yes ( ) No ( )
18. Would you be interested in having such a plan set up, free of charge? Yes ( ) No ( )

Supplemental Form

First Aid

1. Do you have a dispensary? Yes ( ) No ( )
   a. Is it provided with cots? Yes ( ) No ( ) How many?.....
2. What do you now do with accident cases?.....
3. Do you have a person qualified to render first aid? Yes ( ) No ( )
4. Are first aid cabinets readily accessible to workers? Yes ( ) No ( )
5. Are first aid cabinets kept locked? Yes ( ) No ( )
   a. If yes, who has keys?.....
6. Are contents properly maintained? Yes ( ) No ( )
7. Has first aid instruction been given to all employees? Yes ( ) No ( )

Venereal Disease

1. Do you have a venereal disease control program? Yes ( ) No ( )
   a. If yes, describe.....
2. Would you be interested in instituting such a program at no cost to you? Yes ( ) No ( )

Nutrition

1. Do you have a cafeteria? Yes ( ) No ( ) a. Company maintained? Yes ( ) No ( )
2. Are workers permitted to eat in workrooms? Yes ( ) No ( )
3. What is the length of the lunch period?.....

usually small and are intended for minor injuries; they are inadequate if the wound is serious or if many persons are injured at the same time. Serious injuries predominate in air raid casualties, as indicated by the mortality rate of 30 to 50% in the first 24 hours. The simple remedies provided in first aid kits are completely inadequate to cope with the type of injuries sustained in such catastrophes. Immediate hospitalization is required for such casualties, yet hospital arrangements have been made in but one-fifth of the larger plants.

Hospital Employee Health

LEOPOLD BRAHDY, M.D.,
New York City

THE Workmen's Compensation Acts of nine states (California, Illinois, Indiana, Massachusetts, Missouri, New York, North Dakota, Ohio and Wisconsin) now require hospitals to pay disability pensions and the cost of medical care for occupational tuberculosis among their employees. In New York State this ruling became effective as an amendment to the Compensation Law on Sept. 1, 1935, and for the seven years that have since elapsed, the hospitals' expenditures and accrued liabilities for past cases of tuberculosis in New York State alone amount to several million dollars.

Part of this expenditure could have been avoided; some employees had tuberculosis when they were hired although neither the hospital nor the employee was aware of it. X-ray examinations of applicants for employment would have demonstrated that the disease pre-existed the hospital contact but compensation had to be paid because such examinations were not made prior to employment.

Another part of this expenditure could have been materially reduced by an efficient case-finding program among employees who had no demmonstrable disease when hired. It has been shown that most cases of tuberculosis can be discovered in the minimal stage if periodic examinations are made, but few cases can be discovered in that stage without these examinations. In this minimal stage the chances of recovery are excellent, the period of disability is relatively short and the cost of medical care is much less.

Most hospitals made x-ray examinations of the chests of all student nurses before enrollment, periodically during their course of training and, finally, upon graduation, long before tuberculosis coverage was provided by the compensation act. This program of case-finding has been of incalculable value in protecting the students' health and in avoiding unwarranted and burdensome compensation claims against the hospitals.

In the course of training some students develop tuberculosis. We know the tuberculosis rate in young women in any occupation is high. Physicians do not agree whether it is possible to determine in which of them the disease is due to occupational contact in the hospital.

Obviously, compensation law procedure cannot wait for scientific unanimity. Compensation procedure is based on the practical presumption that all affected employees who had no pre-existing clinical disease acquired it because of occupational contact if there was tuberculosis hazard in the hospital.

It is surprising that this system of medical examination was not extended more promptly to all hospital employees when tuberculosis sick pay (or compensation) became compulsory. There have been no minimum standards but now a committee report on a minimal program has been published by the National Tuberculosis Association.

Hospitals have had to learn by hard and expensive experience.

•From "Can We Afford to Economize on Employees' Health Programs," by DR. BRAHDY, in *The Modern Hospital*, March, 1943.

"State Medicine"

LET'S TAKE a look at your private interest in the whole problem. The only practical basis on which this may be reviewed is that of the cause of disease. Disease is produced by two distinct types of factors, recognized by all physicians. Certain extrinsic or external conditions produce disease. Again, certain diseases have their origin in inherent or intrinsic causes. Among the first or external causes, everyone will promptly agree that the agents are either biologic or living, such as the bacteria, the protozoa, the worms, and the viruses or that they are physicochemical agents such as poisons, fire, and trauma.

Among the diseases caused by intrinsic factors are some 300 inherited conditions including cancer, epilepsy, diabetes, certain types of paralysis and blindness.

To make our classification complete we must of course recognize the many diseases of mixed causes; that is, those due to an inherent tendency upon which is grafted the action of extrinsic factors, as in tuberculosis. We shall consider some of the more specific diseases in detail.

In the matter of disease caused by such extrinsic agents as the bacteria, protozoa, helminthes and viruses, the medical profession and the various public health agencies have long recognized the public responsibility, and have met the problem by subsidy of the city, county, state and Federal health boards. That this was a rational program is shown by the decrease in the number of cases of typhoid, malaria, diphtheria, smallpox, yellow fever, etc. Major research on fundamental problems has been one of the outstanding contributions of the United States Public Health Service. Cooperative research with the privately endowed boards such as the Rockefeller Foundation has led to principles of control that could never have been undertaken by private physicians. The recent war on the venereal diseases could never have been carried into the field of open discussion except under the prerogative of a Federal agency, because dissemination of information dealing with sex problems was outlawed.

Federal quarantine in such diseases as poliomyelitis is also rational, since it involves legislative control of interstate traffic, a principle recognized years ago by the farmers of Virginia in taking the law into their own hands in control of the passage of tick-infested cattle through their state.

There has been little or no conflict between private medicine and these various public health agencies in either the distribution of information as public health education, or in the actual administration of immunizing sera, public school examinations, therapeutic canteens, etc. And the cost of such activities has been cheerfully subscribed to by the public and practitioners alike. Thirty years ago such activities were discussed under the title of "State Medicine" by Dean Geddings of the University of Georgia School of Medicine. Today we would agree that this is still the province of "State Medicine."

But what is your concern with disease that has its origin in the physicochemical agents? The first great group of these diseases is that growing out of industry. It includes such conditions as anthracosis, silicosis, lead poisoning, caisson disease, aniline dye poisoning, etc., growing out of the particular nature of the conditions to which workers are subjected. Are we, through taxation, to be held responsible for the diseases of industry while the corporations, large and small, continue to profit on these medical risks? The answer of course is no. The rational solution to the problem has already been met by the Workmen's Compensation Act, which places a premium on the safeguards demanded by factory and mine inspection, and assures the worker of fair care when disease does occur.

A second great group of diseases arises out of our present traffic problem. Am I to be held responsible and made to pay for your hospitalization following an automobile accident which has arisen out of your own folly of drunken, reckless driving? Are you entitled to free hospitalization because some ignorant or irresponsible person forces you off of the road and wrecks your car? Here again a more direct approach to the problem is at hand in traffic regulation of a positive type. Fix individual responsibility for injury as well as for property damage. I am not called upon to buy you a new car? Why should I be made to pay for your medical treatment?

The same rational position is seen in the case of injury due to fire. You do not object to paying a premium for fire coverage on your property. Why then, under "State Medicine," should I be made to chip in my quota of tax to pay for your treatment if you are burned? Again, if a farmer freezes his ears in Minnesota because he

From "Call the Doctor," by JOSEPH KRAFKA, JR., M.D., Augusta, Georgia, in *J.M.A. Georgia*, March, 1943.

MOIST HEAT IN THE TREATMENT OF BOILS and CARBUNCLES

THE moist heat of an ANTIPHLOGISTINE pack plus its hygroscopic and osmotic action is of definite value in the treatment of boils and carbuncles.

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won't wear ear muffs, why should I be made to pay for the services of a cosmetic surgeon to repair the injury? Yet all this is innate in the general proposition of subsidized Federal medicine.

We may now pass to a consideration of the second great group of diseases, those caused by intrinsic or inherited factors. And I ask, is it any business of mine that you have a defective chromosomal setup which makes you different from me? I had no part in either denying you the right to be born, nor in yours to beget offspring marked with your defect, either knowingly or unknowingly. We are far from the Hitlerian legislation in this respect. Why then, under "State Medicine," should I be held responsible, by taxation, for the daily dose of insulin, for your injections of mare's serum, for your ephedrine inhalants, your vitamins ABCDEGK$_2$, for your liver extract, for your audiophones, your straight jacket? No, that is the responsibility of the immediate genetic strain to which you belong; namely, your parents, your uncles and aunts, your sibs. As a scientist I can assume responsibility for you and yours only on two grounds: that of forewarning you of the possibilities of inherent disease in your prospective offspring, and in a further extension of research to determine the quantitative values of extrinsic and intrinsic factors in disease of mixed causes. As a physician I am duty bound to extend my research to a better understanding of all disease.

With this review of public interest in private medical problems it is clear that the present relation between the physician and his patient has had a normal, rational evolution. Why then the revolution?

The whole situation arises out of the present paternal attitude of the Federal government in its attempt to raise the standard of living of the indigent. That a serious situation does exist is not to be denied. The problem however is one of economics. Rural communities under the present setup have difficulty in keeping up with the payment of interest on mortgages and can hardly be expected to support a costly medical service. Those of us, however, who know practice in all of its phases, including the specialties, clinics, outpatient departments and research, are aware of the fact that many of the refinements of diagnosis and treatment may be met with ingenuity under the most sordid home conditions. The "Horse and Buggy Doctor's" experiences are not unique. I have treated kidney colic in a father and pneumonia in the son, with both patients in the same bed.

The Group Plan

THE following is from an Office of War Information release:

Prepaid insurance for doctors' care is being utilized by thousands of war workers, particularly on the West Coast, where there are areas as critically in need of doctors as anywhere in the United States. Before the war began, medical societies of two West Coast states were supporting group plans for industrial workers, group plans which have proved increasingly beneficial as population figures grew. Doctors throughout these states who cooperate in the plans are assigned to care for groups of individuals and are paid by funds from the association.

The group plan in one of these states is proving especially capable of adapting itself to the rapidly changing needs of the population. Before the war, medical insurance was provided for industrial workers and farmers. Now this has been extended to take care of residents of emergency housing projects. It was found that many housing units had been located in regions where the available doctors were already taxed to the limit of their endurance, where the distance from the project to doctors' offices was too great and where most residents were migrants unable to work out their medical care problems in new surroundings without help. For such "mushroom" communities the statewide physicians' service and the Federal Public Housing Authority have cooperated in a plan which brings onto the grounds of the housing project itself a resident doctor, who is paid on straight salary basis, and nursing staff. For special care beyond the res-

ident doctor's attention, patients are referred to a panel of local physicians who cooperate in the state service program. The plan embraces a wide variety of medical treatment, chronic illness, hospital treatment, antepartum care, childbirth and much more. The FPHA collects dues along with the rents. Thus the medical profession itself has adapted a group care plan to an important war emergency. So far, it operates in four large and congested areas of this state, where not quite 90% enrolment of housing project residents has been reached. War workers elsewhere in the state may soon be given doctors' help under this plan.

Employers holding war contracts have shown widely divergent attitudes toward safeguarding the health of their workers, ranging from complete indifference to highly conscientious and efficient action. Here again the West Coast offers examples of outstanding achievement. One shipbuilder surveyed the medical facilities of the communities in which his yards were to be built just as he surveyed all other facilities which would affect either his men or his materials and ultimately his production. In some places the local doctors and hospitals seemed numerous enough to care for the incoming workers, but in two districts where a shortage of both doctors and hospitals appeared unavoidable the employer decided to build his own hospital and hire his own staffs of doctors and nurses. Over 100,000 workers in the shipyards which these two hospitals serve pay a fee each week for medical care. This is deducted from wages. Currently nearly 150,000 treatments are given each month by 72 doctors and nearly 250 nurses. In addition to the two main hospitals and one field hospital, first aid stations are operated throughout the yards which provide quick attention to injuries and also offer preventive medicine, which considerably reduces the illness rate and the time required away from work for treatment.

A Venereal Disease Control Program

—For Indiana Industries—

GEORGE W. BOWMAN, M.D., Chief,
Bureau of Veneral Disease Control,
LOUIS W. SPOLYAR, M.D., Chief,
Bureau of Industrial Hygiene

IN ORDER to assemble current authoritative information and to formulate basic principles applicable to a program of venereal disease control in industry, the Surgeon General of the United States Public Health Service appointed an Advisory Committee to the Service. The report of this committee was published in *J.A.M.A.*, November 14, 1942.

This committee was of the opinion that in its broadest sense a venereal disease control program in industry involves co-operation between four groups: the employer, the employee, the medical profession and the state. The employer is interested in the health and well-being of his employees, the employee in the efficient performance of his job, the medical profession in furnishing diagnostic and treatment facilities for those workers who require medical care, and the public health department in providing certain fundamental facilities which have been developed for the general venereal disease control program and which may be employed to advantage in the program in industry.

Venereal diseases are costly to the employer. The extent of these costs are unknown, but there is sufficient evidence to indicate that they are sizable enough to justify vigorous action. From the standpoint of the employer's liability, sickness and injuries chargeable to the venereal diseases contribute their proportionate share to the loss of time in production as well as the loss of money through compensation payments.

Venereal diseases are no less costly to the worker. He lives by his skill, and he is paid for the time he spends applying that skill. Untreated venereal disease keeps him away from work, impairs his skill, shortens his life. It is in his interests to avail himself of the advantages of venereal disease control measures.

Workers in many plants are provided with a full or part time medical service. The addition of venereal disease control measures would be a logical extension of the medical program. Syphilis and gonorrhea are two diseases for which medical science has developed satisfactory diagnostic, therapeutic and control procedures.

Based on the opinions and recommendations expressed by this committee the Indiana State Board of Health evolved its program for the control of venereal diseases in industry. The detailed program is printed on the opposite page. The program is sound and practical but it has one inherent weakness and that is laboratory facilities. During the present emergency health departments have been seriously crippled by the loss of trained and irreplaceable personnel. Concomitantly there is a marked increase in the demands for laboratory services by Selective Service, private physicians, and industry. Now, while strongly advising and advocating greater activity in the field of syphilis control in industry, it is impossible to offer additional use of State Laboratory facilities, and it becomes necessary that industry make greater use of private laboratory facilities in the development of this program.

In a sense industry is not indigent and good private laboratories, so necessary in any progressive community, should get industries' support. Through this procedure the load on all laboratories will be spread more equitably and all can continue to function at peak efficiency for the duration and post-war period.

This program which could, in one generation, reduce venereal diseases among industrial workers to very insignificant proportions is practicable, will increase production and will reduce compensation and medical costs to a minimum. To accomplish this, it requires the co-operated efforts of Management, Medicine and Labor. Without this co-operated effort, the program is doomed to failure for the integrated whole is dependent upon the sum total of all its constituents.

More and better products can be made by healthy workmen. This fact in the present emergency must not be overlooked.

From *Indiana Health Bulletin.*

NEWS, COMMENT and OPINION

—Continued from page 335.

DRS. PECK, KEHOE AND GARDNER. Traumatic surgery, the next major activity of an industrial physician, was adequately covered through a symposium. All in all, Indiana physicians received authoritative information on all aspects of industrial medicine. A plan was worked out so that Indiana industries could be assured of adequate medical coverage, and organized medicine can justly feel proud of its efforts to further prosecute this war on another front — the industrial front. Chalk up another *first* for Hoosier Medicine, and orchids to DR. SPOLYAR and the Committee on Industrial Health.

—From "Indiana's Industrial Health Conference," in *J. Indiana State M.A.*, April.

AT THE Nineteenth Annual Conference of the Western Pennsylvania Safety Council, Pittsburgh, April 28-29, at the Thursday afternoon session DR. C. O. SAPPINGTON spoke on "Fatigue as a Factor in Accidents and Illness"; DR. FRANCIS HOLDEN on "Findings from Industrial Hygiene Surveys in Western Pennsylvania Industries"; and DR. J. J. WITTMER on "Absenteeism Control."

THE BRENNECKE clinic, Aurora, Illinois, industrial surgery center founded 22 years ago by the late DR. H. A. BRENNECKE, is reported closed because of a wartime shortage of physicians. DR. BRENNECKE, who died March 20, headed a staff of a dozen medical and surgical specialists, and the clinic also had technicians and dentists, and contained a laboratory and a pharmacy.

FORTUNATELY, both for industrial physicians and their patients, so far as the records of lawsuits reveal the facts, industrial physicians have generally been men of skill and ability and have served their industrial patients conscientiously, just as is true with respect to the services rendered by physicians of non-industrial patients. When one considers the enormous amount of medical service rendered, and that each act of that service must conform to the standard of care above stated; how few cases charging mal-

—Continued on page 358.

INDIANA'S VENEREAL DISEASE CONTROL PROGRAM FOR INDUSTRY

Indiana State Board of Health

Bureau of Venereal Disease Control

Responsibility

Consultation service to industry
Recommendations as to:

1. Inauguration of program
2. Methods of control
3. Laboratory procedures
4. Treatment facilities
5. Educational procedures
6. Distribution of free drugs to indigents or semi-indigents
7. Case finding and holding procedures
8. Employment policies

Bureau of Industrial Hygiene

Responsibility

1. Consultation service to Bureau of Venereal Disease Control on problems pertaining to make-up of industry
2. Sell the program to industry
3. Contact industry for Bureau of Venereal Disease Control in developing program
4. Act as clearing house for information on venereal disease control problems in industry

OBJECTIVES OF PROGRAM

A. Medical and Public Health

1. Find and refer all cases for treatment
2. Prevent spread of venereal diseases
3. Prevent complications through adequate treatment
4. Find contacts
5. Establish policies of employment
6. Adequate reporting of cases

B. Employee

1. Improve his physical condition
2. Reduce number of work days lost
3. Place employee on job that he is physically capable of performing without danger to himself or his fellow workers
4. Prolong and increase his earning power

C. Employer

1. Reduce compensation costs
2. Reduce labor turnover
3. Increased production through increased efficiency and planning
4. Increase workers' morals

THE PROGRAM

Education for All Workers

A. Program must be inaugurated with well-planned educational campaign

B. **Employee** should be convinced that

1. He will not lose his job
2. Adequate treatment will protect his health and his ability to earn a living
3. Venereal diseases can be controlled and arrested

C. **Employer** should understand that

1. All cases are not infectious
2. If cases are under proper treatment, that these persons can be employed safely and profitably

D. Educational campaign should be executed through

1. Posters
2. Folders
3. Bulletins
4. Lectures
5. Visual aids

Employment of All Applicants Capable of Working

A. An employee should not be denied employment nor discharged because he has a venereal disease

B. If applicant has a communicable venereal disease

1. Refer to family doctor or clinic for confirmation and treatment
2. To be employed when rendered noninfectious
3. Future employment is dependent on his willingness to continue treatment
4. Confidential venereal disease report directly to State Board of Health Bureau of Venereal Disease Control in accordance with Indiana statutes

C. If applicant has a noncommunicable venereal disease

1. Can be hired immediately
2. Referred to family doctor or clinic for treatment
3. Continuation of employment is dependent on his willingness to continue treatment

D. If applicant has cardiovascular, central nervous system or visceral syphilis

1. Doctor should refer him to a job he is physically and mentally capable of doing with safety to himself and fellow workers

E. Follow-up

1. Plant doctor makes arrangement with family physician to care for case
2. Family physician keeps plant doctor posted on how regular patient is taking treatment
3. If patient refuses to continue treatment, plant doctor notifies management that patient is no longer fit for work
4. Management discharges patient
5. Plant doctor should send names to health department for follow-up

Medical Examination Of All Workers

A. Examination to include serodiagnostic tests

B. Smears for gonorrhea, when indicated

C. Interval of tests

1. Pre-employment examinations
2. When doing periodic examinations
3. Return from illness examinations
4. Under no circumstances should more than three years elapse between tests

D. Venereal disease control procedures to be a part of a well-given medical examination

E. Results of examinations to be confidential information of medical department. Files to be in the medical department

F. All applicants having positive tests are to be informed by conference with plant doctor. Doctor to explain his employability to applicant

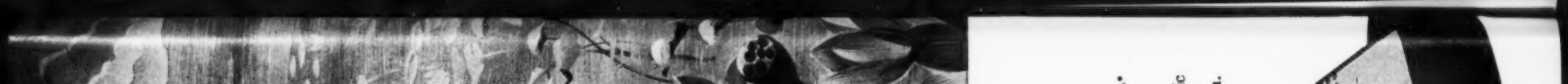
"Seeds of the Red Lotus

will make those with gazelle eyes unfruitful." —KALYANAMALLA*

● The great poets of India in the measured cadences of Sanskrit suggested certain methods, some of a mystic nature, for the control of fertility. But neither poetry nor mysticism have paved the way to medical progress in India.

● *The Physician's Responsibility* . . . It is the province of medicine, the prerogative of the physician, to make decisions in all matters relating to fertility and sterility. The physician's responsibility encompasses all those who need and seek advice. The physician is the only person qualified to give it.

Clinical and laboratory research has established the efficacy of Ortho-Gynol as prescribed by physicians for the control of conception.

*Himes—Medical History of Contraception

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